SEQUENCE LISTING

<110> Padigaru, Muralidhara
       Alsobrook II, John P
       Colman, Steven D
       Spytek, Kimberly A
       Boldog, Ferenc
       Vernet, Corine AM
       Li, Li
       Shenoy, Suresh G
       Casman, Stacie J
       Guo, Xiaojia Sasha
       Edinger, Shlomit R
       MacDougall, John R
       Malyankar, Uriel M
       Patturajan, Meera
       Shimkets, Richard A
       Pena, Carol EA
       Tchernev, Velizar T
       Zerhusen, Bryan D
       Millet, Isabelle
       Miller, Charles E
       Lepley, Denise M
       Smithson, Glennda
       Baumgartner, Jason C
       Herrman, John L
       Peyman, John A
       Gorman, Linda
       Mezes, Peter D
       Kekuda, Ramesh
       Taupier Jr, Raymond J
       Gerlach, Valerie
       Grosse, William M
       Liu, Xiaohong
       Ellerman, Karen
       Rothenberg, Mark
       Stone, David J
       Burgess, Catherine E

<120> PROTEINS, POLYNUCLEOTIDES ENCODING THEM AND METHODS OF
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<140> 10/051,874
<141> 2002-01-16

<150> 60/268,595

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<213> Homo sapiens

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 1               5                  10                  15

Gln Ala Gln Tyr Glu Asp Asp Pro His Trp Trp Phe His Tyr Leu Arg
            20                  25                  30

Ser Gln Gln Ser Thr Tyr Tyr Asp Pro Tyr Asp Pro Tyr Pro Tyr Glu
        35                  40                  45

Thr Tyr Glu Pro Tyr Pro Tyr Gly Val Asp Glu Gly Pro Ala Tyr Thr
    50                  55                  60

Tyr Gly Ser Pro Ser Pro Pro Asp Pro Arg Asp Cys Pro Gln Glu Cys
65                  70                  75                  80

Asp Cys Pro Pro Asn Phe Pro Thr Ala Met Tyr Cys Asp Asn Arg Asn
                85                  90                  95

Leu Lys Tyr Leu Pro Phe Val Pro Ser Arg Met Lys Tyr Val Tyr Phe
            100                 105                 110

Gln Asn Asn Gln Ile Thr Ser Ile Gln Glu Gly Val Phe Asp Asn Ala
        115                 120                 125
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3

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Thr Gly Leu Leu Trp Ile Ala Leu His Gly Asn Gln Ile Thr Ser Asp
    130             135                 140

Lys Val Gly Arg Lys Val Phe Ser Lys Leu Arg His Leu Glu Arg Leu
145             150                 155                     160

Tyr Leu Asp His Asn Asn Leu Thr Arg Met Pro Gly Pro Leu Pro Arg
                165                 170                 175

Ser Leu Arg Glu Leu His Leu Asp His Asn Gln Ile Ser Arg Val Pro
            180                 185                 190

Asn Asn Ala Leu Glu Gly Leu Glu Asn Leu Thr Ala Leu Tyr Leu Gln
            195                 200                 205

His Asn Glu Ile Gln Glu Val Gly Ser Ser Met Arg Gly Leu Arg Ser
    210                 215                 220

Leu Ile Leu Leu Asp Leu Ser Tyr Asn His Leu Arg Lys Val Pro Asp
225             230                 235                     240

Gly Leu Pro Ser Ala Leu Glu Gln Leu Tyr Met Glu His Asn Asn Val
                245                 250                 255

Tyr Thr Val Pro Asp Ser Tyr Phe Arg Gly Ala Pro Lys Leu Leu Tyr
                260                 265                 270

Val Arg Leu Ser His Asn Ser Leu Thr Asn Asn Gly Leu Ala Ser Asn
            275                 280                 285

Thr Phe Asn Ser Ser Ser Leu Leu Glu Leu Asp Leu Ser Tyr Asn Gln
    290                 295                 300

Leu Gln Lys Ile Pro Pro Val Asn Thr Asn Leu Glu Asn Leu Tyr Leu
305             310                 315                     320

Gln Gly Asn Arg Ile Asn Glu Phe Ser Ile Gln Glu Gly Val Phe Asp
                325                 330                 335

Asn Ala Thr Gly Leu Leu Trp Ile Ala Leu His Gly Asn Phe Ser Thr
                340                 345                 350

Ala Met Tyr Cys Asp Asn Arg Asn Leu Lys Tyr Leu Pro Phe Val Pro
    355                 360                 365

Ser Arg Met Lys Tyr Val Tyr Phe Gln Asn Asn Gln Ile Thr Ser Lys
    370                 375                 380
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Leu Gln Val Leu Arg Leu Asp Gly Asn Glu Ile Lys Arg Ser Ala Met
385                 390                 395                 400

Pro Ala Asp Ala Pro Leu Cys Leu Arg Leu Ala Ser Leu Ile Glu Ile
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<212> DNA
<213> Homo sapiens

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atgaccctca ttggtggttc cactacctcc gcagccagca gtccacctac tacgatccct  180
atgaccctta cccgtatgag acctacgagc cttaccccta tggggtggat gaagggccag  240
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gcccacccaa cttccccacg gccatgtact gtgacaatcg caacctcaag tacctgcctc  360
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gcagttccat gaggggcctc cggtcactgt acttgctgga cctgagttat aaccaccttc  540
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tctcacaccgt ccccgatagc tacttccggg gggcgcccaa gctgctgtat gtgcggctgt  660
cccacaacag tctaaccaac aatggcctgg cctccaacac cttcaattcc agcagcctcc  720
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tggtggacgt cgtgaacttc tcccagctgc aggtcgtgcg gctggacggg aacgagatga  900
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<210> 4
<211> 302
<212> PRT
<213> Homo sapiens

<400> 4
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Gln Ala Gln Tyr Glu Asp Asp Pro His Trp Trp Phe His Tyr Leu Arg
             20                  25                  30

Ser Gln Gln Ser Thr Tyr Tyr Asp Pro Tyr Asp Pro Tyr Pro Tyr Glu
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                35                      40                        45

     Thr Tyr Glu Pro Tyr Pro Tyr Gly Val Asp Glu Gly Pro Ala Tyr Thr
        50                      55                  60

     Tyr Gly Ser Pro Ser Pro Pro Asp Pro Arg Asp Cys Pro Gln Glu Cys
      65                      70                  75                  80

     Asp Cys Pro Pro Asn Phe Pro Thr Ala Met Tyr Cys Asp Asn Arg Asn
                        85                  90                      95

     Leu Lys Tyr Leu Pro Arg Ser Leu Arg Glu Leu His Leu Asp His Asn
                100                     105                 110

     Gln Ile Ser Arg Val Pro Asn Asn Ala Leu Glu Gly Leu Glu Asn Leu
            115                     120                 125

     Thr Ala Leu Tyr Leu Gln His Asn Glu Ile Gln Glu Val Gly Ser Ser
        130                     135                 140

     Met Arg Gly Leu Arg Ser Leu Tyr Leu Leu Asp Leu Ser Tyr Asn His
     145                     150                 155                 160

     Leu Arg Lys Val Pro Asp Gly Leu Pro Ser Ala Leu Glu Gln Leu Tyr
                        165                 170                     175

     Met Glu His Asn Asn Val Tyr Thr Val Pro Asp Ser Tyr Phe Arg Gly
                    180                     185                 190

     Ala Pro Lys Leu Leu Tyr Val Arg Leu Ser His Asn Ser Leu Thr Asn
            195                     200                 205

     Asn Gly Leu Ala Ser Asn Thr Phe Asn Ser Ser Ser Leu Leu Glu Leu
        210                     215                 220

     Asp Leu Ser Tyr Asn Gln Leu Gln Lys Ile Pro Pro Val Asn Thr Asn
     225                     230                 235                 240

     Leu Glu Asn Leu Tyr Leu Gln Gly Asn Arg Ile Asn Glu Phe Ser Ile
                    245                     250                 255

     Ser Ser Phe Cys Thr Val Val Asp Val Val Asn Phe Ser Gln Leu Gln
                    260                     265                 270

     Val Val Arg Leu Asp Gly Asn Glu Met Lys Arg Ser Ala Met Pro Ala
            275                     280                 285

     Glu Ala Pro Leu Cys Leu Arg Leu Ala Ser Leu Ile Glu Ile
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<212> DNA
<213> Homo sapiens

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atgaccctca ttggtggttc cactacctcc gcagccagca gtccacctac tacgatccct 180
atgaccctta cccgtatgag acctacgagc cttaccccta tggggtggat gaagggccag 240
cctacaccta cggctctcca tccctccag atccccgcga ctgccccag gagtcgcgact 300
gcccacccaa cttccccacg gccatgtact gtgacaatcg caacctcaag tacctgccct 360
tcgttccctc ccgcatgaag tatgtgtact tccagaacaa ccagatcacc tccatccagg 420
aaggcgtctt tgacaatgcc acagggctgc tctggattgc tctccacggc aaccagatca 480
ccagtgataa ggtgggcagg aagtcttct ccaagctgag gcacctggag aggctgtacc 540
tggaccacaa caacctgacc cggatgcccg gtcccctgcc tcgatccctg agagagctcc 600
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<210> 6
<211> 360
<212> PRT
<213> Homo sapiens

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1   5   10   15

Gln Ala Gln Tyr Glu Asp Asp Pro His Trp Trp Phe His Tyr Leu Arg
                20   25   30

Ser Gln Gln Ser Thr Tyr Tyr Asp Pro Tyr Asp Pro Tyr Pro Tyr Glu
            35   40   45

Thr Tyr Glu Pro Tyr Pro Tyr Gly Val Asp Glu Gly Pro Ala Tyr Thr
        50   55   60

7

Tyr Gly Ser Pro Ser Pro Pro Asp Pro Arg Asp Cys Pro Gln Glu Cys
65   70   75   80

Asp Cys Pro Pro Asn Phe Pro Thr Ala Met Tyr Cys Asp Asn Arg Asn
                  85   90   95

Leu Lys Tyr Leu Pro Phe Val Pro Ser Arg Met Lys Tyr Val Tyr Phe
            100   105   110

Gln Asn Asn Gln Ile Thr Ser Ile Gln Glu Gly Val Phe Asp Asn Ala
        115   120   125

Thr Gly Leu Leu Trp Ile Ala Leu His Gly Asn Gln Ile Thr Ser Asp
    130   135   140

Lys Val Gly Arg Lys Val Phe Ser Lys Leu Arg His Leu Glu Arg Leu
145   150   155   160

Tyr Leu Asp His Asn Asn Leu Thr Arg Met Pro Gly Pro Leu Pro Arg
                165   170   175

Ser Leu Arg Glu Leu His Leu Asp His Asn Gln Ile Ser Arg Val Pro
            180   185   190

Asn Asn Ala Leu Glu Gly Leu Glu Asn Leu Thr Ala Leu Tyr Leu Gln
        195   200   205

His Asn Glu Ile Gln Glu Val Gly Ser Ser Met Arg Gly Leu Arg Ser
    210   215   220

Leu Tyr Leu Leu Asp Leu Ser Tyr Asn His Leu Arg Lys Val Pro Asp
225   230   235   240

Gly Leu Pro Ser Ala Leu Glu Gln Leu Tyr Met Glu His Asn Asn Val
                245   250   255

Tyr Thr Val Pro Asp Ser Tyr Phe Arg Gly Ala Pro Lys Leu Leu Tyr
                260   265   270

Val Arg Leu Ser His Asn Ser Leu Thr Asn Asn Gly Leu Ala Ser Asn
        275   280   285

Thr Phe Asn Ser Ser Ser Leu Leu Glu Leu Asp Leu Ser Tyr Asn Gln
    290   295   300

Leu Gln Lys Ile Pro Pro Val Asn Thr Ile Ser Ser Phe Cys Thr Val
305   310   315   320

8

Val Asp Val Val Asn Phe Ser Gln Leu Gln Val Val Arg Leu Asp Gly
                325   330   335

Asn Glu Met Lys Arg Ser Ala Met Pro Ala Glu Ala Pro Leu Cys Leu
            340   345   350

Arg Leu Ala Ser Leu Ile Glu Ile
        355   360

<210> 7
<211> 1053
<212> DNA
<213> Homo sapiens

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<212> PRT
<213> Homo sapiens

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 1   5   10   15

Ser Gln Gln Ser Thr Tyr Tyr Asp Pro Tyr Asp Pro Tyr Pro Tyr Glu
            20   25   30

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Thr Tyr Glu Pro Tyr Pro Tyr Gly Val Asp Glu Gly Pro Ala Tyr Thr
        35                  40                  45

Tyr Gly Ser Pro Ser Pro Pro Asp Pro Arg Asp Cys Pro Gln Glu Cys
    50                  55                  60

Asp Cys Pro Pro Asn Phe Pro Thr Ala Met Tyr Cys Asp Asn Arg Asn
 65                  70                  75                      80

Leu Lys Tyr Leu Pro Phe Val Pro Ser Arg Met Lys Tyr Val Tyr Phe
                85                  90                  95

Gln Asn Asn Gln Ile Thr Ser Ile Gln Glu Gly Val Phe Asp Asn Ala
            100                 105                 110

Thr Gly Leu Leu Trp Ile Ala Leu His Gly Asn Gln Ile Thr Ser Asp
        115                 120                 125

Lys Val Gly Arg Lys Val Phe Ser Lys Leu Arg His Leu Glu Arg Leu
    130                 135                 140

Tyr Leu Asp His Asn Asn Leu Thr Arg Met Pro Gly Pro Leu Pro Arg
145                 150                 155                 160

Ser Leu Arg Glu Leu His Leu Asp His Asn Gln Ile Ser Arg Val Pro
            165                 170                 175

Asn Asn Ala Leu Glu Gly Leu Glu Asn Arg Thr Ala Leu Tyr Leu Gln
            180                 185                 190

His Asn Glu Ile Gln Glu Val Gly Ser Ser Met Arg Gly Leu Arg Ser
        195                 200                 205

Leu Ile Leu Leu Asp Leu Ser Tyr Asn His Leu Arg Lys Val Pro Asp
    210                 215                 220

Gly Leu Pro Ser Ala Leu Glu Gln Leu Tyr Met Glu His Asn Asn Val
225                 230                 235                 240

Tyr Thr Val Pro Asp Ser Tyr Phe Arg Gly Ala Pro Lys Leu Leu Tyr
            245                 250                 255

Val Arg Leu Ser His Asn Ser Leu Thr Asn Asn Gly Leu Ala Ser Asn
            260                 265                 270

Thr Phe Asn Ser Ser Ser Leu Leu Glu Leu Asp Leu Ser Tyr Asn Leu
        275                 280                 285
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Glu Asn Leu Tyr Leu Gln Gly Asn Arg Ile Asn Glu Phe Ser Ile Ser
    290   295   300

Ser Phe Cys Thr Val Val Asp Val Val Asn Phe Ser Lys Leu Gln Val
305   310   315   320

Leu Arg Leu Asp Gly Asn Glu Ile Lys Arg Ser Ala Met Pro Ala Asp
                325   330   335

Ala Pro Leu Cys Arg Arg Leu Ala Ser Leu Ile Glu Ile Leu Glu
            340   345   350

<210> 9
<211> 1280
<212> DNA
<213> Homo sapiens

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<210> 10
<211> 421
<212> PRT
<213> Homo sapiens

11

<400> 10
Thr Gly Ala Leu Pro Arg Leu Cys Asp Val Leu Gln Val Leu Trp Glu
 1   5   10   15

Glu Gln Asp Gln Cys Leu Gln Glu Leu Ser Arg Glu Gln Thr Gly Asp
            20   25   30

Leu Gly Thr Glu Gln Pro Val Pro Gly Cys Glu Gly Met Trp Asp Asn
        35   40   45

Ile Ser Cys Trp Pro Ser Ser Val Pro Gly Arg Met Val Glu Val Glu
    50   55   60

Cys Pro Arg Phe Leu Arg Met Leu Thr Ser Arg Asn Gly Ser Leu Phe
65   70   75   80

Arg Asn Cys Thr Gln Asp Gly Trp Ser Glu Thr Phe Pro Arg Pro Asn
            85   90   95

Leu Ala Cys Gly Val Asn Val Asn Asp Ser Ser Asn Glu Lys Arg His
            100   105   110

Ser Tyr Leu Leu Lys Leu Lys Val Met Tyr Thr Val Gly Tyr Ser Ser
        115   120   125

Ser Leu Val Met Leu Leu Val Ala Leu Gly Ile Leu Cys Ala Phe Arg
    130   135   140

Arg Leu His Cys Thr Arg Asn Tyr Ile His Met His Leu Phe Val Ser
145   150   155   160

Phe Ile Leu Arg Ala Leu Ser Asn Phe Ile Lys Asp Ala Val Leu Phe
            165   170   175

Ser Ser Asp Asp Val Thr Tyr Cys Asp Ala His Arg Ala Gly Cys Lys
            180   185   190

Leu Val Met Val Leu Phe Gln Tyr Cys Ile Met Ala Asn Tyr Ser Trp
        195   200   205

Leu Leu Val Glu Gly Leu Tyr Leu His Thr Leu Leu Ala Ile Ser Phe
    210   215   220

Phe Ser Glu Arg Lys Tyr Leu Gln Gly Phe Val Ala Phe Gly Trp Gly
225   230   235   240

Ser Pro Ala Ile Phe Val Ala Leu Trp Ala Ile Ala Arg His Phe Leu
            245   250   255

12

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Glu Asp Val Gly Cys Pro Ser Leu Arg Cys Trp Asp Ile Asn Ala Asn
            260                 265                 270

Ala Ser Ile Trp Trp Ile Ile Arg Gly Pro Val Ile Leu Ser Ile Leu
        275                 280                 285

Ile Asn Phe Ile Leu Phe Ile Asn Ile Leu Arg Ile Leu Met Arg Lys
    290                 295                 300

Leu Arg Thr Gln Glu Thr Arg Gly Asn Glu Val Ser His Tyr Lys Arg
305                 310                 315                 320

Leu Ala Arg Ser Thr Leu Leu Leu Ile Pro Leu Phe Gly Ile His Tyr
            325                 330                 335

Ile Val Phe Ala Phe Ser Pro Glu Asp Ala Met Glu Ile Gln Leu Phe
            340                 345                 350

Phe Glu Leu Ala Leu Gly Ser Phe Gln Gly Leu Val Val Ala Val Leu
        355                 360                 365

Tyr Cys Phe Leu Asn Gly Glu Val Gln Leu Glu Val Gln Lys Lys Trp
    370                 375                 380

Gln Gln Trp His Leu Arg Glu Phe Pro Leu His Pro Val Ala Ser Phe
385                 390                 395                 400

Ser Asn Ser Thr Lys Ala Ser His Leu Glu Gln Ser Gln Gly Thr Cys
            405                 410                 415

Arg Thr Ser Ile Ile
            420


<210> 11
<211> 789
<212> DNA
<213> Homo sapiens

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13

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<210> 12
<211> 161
<212> PRT
<213> Homo sapiens

<400> 12
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Leu Leu Ala Cys Ala Ala His Ser His Ser Tyr Leu Leu Lys Leu Lys
            20                  25                  30


Val Met Tyr Thr Val Gly Tyr Ser Ser Ser Leu Val Met Leu Leu Val
        35                  40                  45


Ala Leu Gly Ile Leu Cys Ala Phe Arg Arg Leu His Cys Thr Arg Asn
    50                  55                  60


Tyr Ile His Met His Leu Phe Val Ser Phe Ile Leu Arg Ala Leu Ser
 65                  70                  75                  80


Asn Phe Ile Lys Asp Ala Val Leu Phe Ser Ser Asp Asp Val Thr Tyr
                85                  90                  95


Cys Asp Ala His Arg Gly Leu Val Val Ala Val Leu Tyr Cys Phe Leu
            100                 105                 110


Asn Gly Glu Val Gln Leu Glu Val Gln Lys Lys Trp Gln Gln Trp His
            115                 120                 125


Leu Arg Glu Phe Pro Leu His Pro Val Ala Ser Phe Ser Asn Ser Thr
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Lys Ala Ser His Leu Glu Gln Ser Leu Gly Thr Cys Arg Thr Ser Ile
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<211> 1633
<212> DNA
<213> Homo sapiens

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<211> 290
<212> PRT
<213> Homo sapiens

<400> 14
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            20   25   30

15

Asp Val Leu Gln Val Leu Trp Glu Glu Gln Asp Gln Cys Leu Gln Glu
          35   40   45

Leu Ser Arg Glu Gln Thr Gly Asp Leu Gly Thr Glu Gln Pro Val Pro
      50   55   60

Gly Cys Glu Gly Met Trp Asp Asn Ile Ser Cys Trp Pro Ser Ser Val
  65   70   75   80

Pro Gly Arg Met Val Glu Val Glu Cys Pro Arg Phe Leu Arg Met Leu
                  85   90   95

Thr Ser Arg Asn Gly Ser Leu Phe Arg Asn Cys Thr Gln Asp Gly Trp
              100   105   110

Ser Glu Thr Phe Pro Arg Pro Asn Leu Ala Cys Gly Val Asn Val Asn
          115   120   125

Asp Ser Ser Asn Glu Lys Arg His Ser Tyr Leu Leu Lys Leu Lys Val
    130   135   140

Met Tyr Thr Val Gly Tyr Ser Ser Ser Leu Val Met Leu Leu Val Ala
145   150   155   160

Leu Gly Ile Leu Cys Ala Phe Arg Arg Leu His Cys Thr Arg Asn Tyr
                  165   170   175

Ile His Met His Leu Phe Val Ser Phe Ile Leu Arg Ala Leu Ser Asn
              180   185   190

Phe Ile Lys Asp Ala Val Leu Phe Ser Ser Asp Asp Val Thr Tyr Cys
          195   200   205

Asp Pro His Arg Ala Gly Cys Lys Leu Val Met Val Leu Phe Gln Tyr
      210   215   220

Cys Ile Met Ala Asn Tyr Ser Trp Leu Leu Val Glu Gly Leu Tyr Leu
225   230   235   240

His Thr Leu Leu Ala Ile Ser Phe Phe Ser Glu Arg Lys Tyr Leu Gln
                  245   250   255

Gly Phe Val Ala Phe Gly Trp Gly Ser Pro Ala Ile Phe Val Ala Leu
              260   265   270

Trp Ala Ile Ala Arg His Phe Leu Glu Asp Val Gly Leu Ile Ser Ser
      275   280   285

16

Phe Ser
    290

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<211> 1449
<212> DNA
<213> Homo sapiens

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<210> 16
<211> 302
<212> PRT
<213> Homo sapiens

<400> 16
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Arg Ala Asp Thr Gln Glu Lys Glu Val Arg Ala Met Val Gly Ser Asp

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              20   25

Val Glu Leu Ser Cys Ala Cys Pro Glu Gly Ser Arg Phe Asp Leu Asn
          35   40   45

Asp Val Tyr Val Tyr Trp Gln Thr Ser Glu Ser Lys Thr Val Val Thr
    50   55   60

Tyr His Ile Pro Gln Asn Ser Ser Leu Glu Asn Val Asp Ser Arg Tyr
  65   70   75   80

Arg Asn Arg Ala Leu Met Ser Pro Ala Gly Met Leu Arg Gly Asp Phe
              85   90   95

Ser Leu Arg Leu Phe Asn Val Thr Pro Gln Asp Glu Gln Lys Phe His
          100   105   110

Cys Leu Val Leu Ser Gln Ser Leu Gly Phe Gln Glu Val Leu Ser Val
      115   120   125

Glu Val Thr Leu His Val Ala Ala Asn Phe Ser Val Pro Val Val Ser
    130   135   140

Ala Pro His Ser Pro Ser Gln Asp Glu Leu Thr Phe Thr Cys Thr Ser
145   150   155   160

Ile Asn Gly Tyr Pro Arg Pro Asn Val Tyr Trp Ile Asn Lys Thr Asp
              165   170   175

Asn Ser Leu Leu Asp Gln Ala Leu Gln Asn Asp Thr Val Phe Leu Asn
              180   185   190

Met Arg Gly Leu Tyr Asp Val Val Ser Val Leu Arg Ile Ala Arg Thr
          195   200   205

Pro Ser Val Asn Ile Gly Cys Cys Ile Glu Asn Val Leu Leu Gln Gln
    210   215   220

Asn Leu Thr Val Gly Ser Gln Thr Gly Asn Asp Ile Gly Glu Arg Asp
225   230   235   240

Lys Ile Thr Glu Asn Pro Val Ser Thr Gly Glu Lys Asn Ala Ala Thr
              245   250   255

Trp Ser Ile Leu Ala Val Leu Cys Leu Leu Val Val Val Ala Val Ala
              260   265   270

Ile Gly Trp Val Cys Arg Asp Arg Cys Leu Gln His Ser Tyr Ala Gly

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Ala Trp Ala Val Ser Pro Glu Thr Glu Leu Thr Gly His Val
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<210> 17
<211> 8250
<212> DNA
<213> Homo sapiens

<400> 17
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<210> 18
<211> 473
<212> PRT
<213> Homo sapiens

<400> 18
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            20                  25                  30

Val Glu Leu Ser Cys Ala Cys Pro Glu Gly Ser Arg Phe Asp Leu Asn
        35                  40                  45

Asp Val Tyr Val Tyr Trp Gln Thr Ser Glu Ser Lys Thr Val Val Thr
    50                  55                  60

Tyr His Ile Pro Gln Asn Ser Ser Leu Glu Asn Val Asp Ser Arg Tyr
65                  70                  75                  80

Arg Asn Arg Ala Leu Met Ser Pro Ala Gly Met Leu Arg Gly Asp Phe
                85                  90                  95

Ser Leu Arg Leu Phe Asn Val Thr Pro Gln Asp Glu Gln Lys Phe His
            100                 105                 110

Cys Leu Val Leu Ser Gln Ser Leu Gly Phe Gln Glu Val Leu Ser Val
            115                 120                 125

Glu Val Thr Leu His Val Ala Ala Asn Phe Ser Val Pro Val Val Ser
        130                 135                 140

Ala Pro His Ser Pro Ser Gln Asp Glu Leu Thr Phe Thr Cys Thr Ser
145                 150                 155                 160

Ile Asn Gly Tyr Pro Arg Pro Asn Val Tyr Trp Ile Asn Lys Thr Asp
                165                 170                 175

Asn Ser Leu Leu Asp Gln Ala Leu Gln Asn Asp Thr Val Phe Leu Asn
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190
              180   185

Met Arg Gly Leu Tyr Asp Val Val Ser Val Leu Arg Ile Ala Arg Thr
                                 200   205
              195

Pro Ser Val Asn Ile Gly Cys Cys Ile Glu Asn Val Leu Leu Gln Gln
                            215   220
      210

Asn Leu Thr Val Gly Ser Gln Thr Gly Asn Asp Ile Gly Glu Arg Asp
                        230   235   240
225

Lys Ile Thr Glu Asn Pro Val Ser Thr Gly Glu Lys Asn Ala Ala Thr
                   245   250   255

Trp Ser Ile Leu Ala Val Leu Cys Leu Leu Val Val Val Ala Val Ala
              260   265   270

Ile Gly Trp Val Cys Arg Asp Arg Cys Leu Gln His Ser Tyr Ala Gly
         275   280   285

Ala Trp Ala Val Ser Pro Glu Thr Glu Leu Thr Gly Glu Phe Ala Val
      290   295   300

Gly Ser Ser Arg Phe Trp Gly Ala Gln Gly Arg Leu Gly Cys Gln Leu
                   310   315   320
305

Ser Phe Arg Val Ser Lys Asn Phe Gln Lys Ala Lys Val Pro Cys Leu
                   325   330   335

Glu Gln Leu Leu Phe Leu Glu Thr Gln Arg Ser Pro Arg Trp Cys Ala
              340   345   350

Trp His Phe Leu Gln Pro Pro Leu Gly Met Gly Trp His Pro Gly Val
         355   360   365

His Phe Val Thr Leu Arg Trp Asp Phe Pro Asn Met His Arg Ser Arg
      370   375   380

Glu Thr Ser Ala Arg Pro Pro Arg Ser Pro Val Pro Ser Pro Asp Gln
                   390   395   400
385

Gly Val Gln Gly Gly Ser Arg His Arg Arg Pro Ala Pro Met Gly Cys
                   405   410   415

Pro Glu Trp Val Gln Ala Pro Ala Pro Ser Pro Arg Gly Val Ser Arg
              420   425   430

Ala Gly Pro Gly Thr Gly Ala Gln Pro Leu Trp Gly Val Arg Ser Gly

                              23

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Ser Gly His Arg Gln Leu Leu Ser Val Ala Ala Thr Pro Ala Ala Leu
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Val Cys Pro Ser Val Pro Gly Ala Thr
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<210> 19
<211> 4582
<212> DNA
<213> Homo sapiens

<400> 19

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<210> 20
<211> 290

25

<212> PRT
<213> Homo sapiens

<400> 20

Met Arg Ile Phe Ala Val Phe Ile Phe Met Thr Tyr Trp His Leu Leu
1   5   10   15

Asn Ala Phe Thr Val Thr Val Pro Lys Asp Leu Tyr Val Val Glu Tyr
                20   25   30

Gly Ser Asn Met Thr Ile Glu Cys Lys Phe Pro Val Glu Lys Gln Leu
            35   40   45

Asp Leu Ala Ala Leu Ile Val Tyr Trp Glu Met Glu Asp Lys Asn Ile
        50   55   60

Ile Gln Phe Val His Gly Glu Glu Asp Leu Lys Val Gln His Ser Ser
65   70   75   80

Tyr Arg Gln Arg Ala Arg Leu Leu Lys Asp Gln Leu Ser Leu Gly Asn
                85   90   95

Ala Ala Leu Gln Ile Thr Asp Val Lys Leu Gln Asp Ala Gly Val Tyr
            100   105   110

Arg Cys Met Ile Ser Tyr Gly Gly Ala Asp Tyr Lys Arg Ile Thr Val
        115   120   125

Lys Val Asn Ala Pro Tyr Asn Lys Ile Asn Gln Arg Ile Leu Val Val
    130   135   140

Asp Pro Val Thr Ser Glu His Glu Leu Thr Cys Gln Ala Glu Gly Tyr
145   150   155   160

Pro Lys Ala Glu Val Ile Trp Thr Ser Ser Asp His Gln Val Leu Ser
                165   170   175

Gly Lys Thr Thr Thr Thr Asn Ser Lys Arg Glu Glu Lys Leu Phe Asn
            180   185   190

Val Thr Ser Thr Leu Arg Ile Asn Thr Thr Thr Asn Glu Ile Phe Tyr
        195   200   205

Cys Thr Phe Arg Arg Leu Asp Pro Glu Glu Asn His Thr Ala Glu Leu
    210   215   220

Val Ile Pro Glu Leu Pro Leu Ala His Pro Pro Asn Glu Arg Thr His
225   230   235   240

26

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Leu Val Ile Leu Gly Ala Ile Leu Leu Cys Leu Gly Val Ala Leu Thr
                245                     250                     255

Phe Ile Phe Arg Leu Arg Lys Gly Arg Met Met Asp Val Lys Lys Cys
                260                     265                     270

Gly Ile Gln Asp Thr Asn Ser Lys Lys Gln Ser Asp Thr His Leu Glu
            275                     280                     285

Glu Thr
    290


<210> 21
<211> 745
<212> DNA
<213> Homo sapiens

<400> 21
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<210> 22
<211> 178
<212> PRT
<213> Homo sapiens

<400> 22
Met Arg Ile Phe Ala Val Phe Ile Phe Met Thr Tyr Trp His Leu Leu
 1               5                      10                      15

Asn Ala Phe Thr Val Thr Val Pro Lys Asp Leu Tyr Val Val Glu Tyr
                20                      25                      30

Gly Ser Asn Met Thr Ile Glu Cys Lys Phe Pro Val Glu Lys Gln Leu
```

```
         35                   40                      45
Asp Leu Ala Ala Leu Ile Val Tyr Trp Glu Met Glu Asp Lys Asn Ile
    50                   55                      60

Ile Gln Phe Val His Gly Glu Glu Asp Leu Lys Val Gln His Ser Ser
    65                   70                      75          80

Tyr Arg Gln Arg Ala Arg Leu Leu Lys Asp Gln Leu Ser Leu Gly Asn
                    85                      90                  95

Ala Ala Leu Gln Ile Thr Asp Val Lys Leu Gln Asp Ala Gly Val Tyr
                   100                     105          110

Arg Cys Met Ile Ser Tyr Gly Gly Ala Asp Tyr Lys Arg Ile Thr Val
              115                     120              125

Lys Val Asn Ala Pro Tyr Asn Lys Ile Asn Gln Arg Ile Leu Val Val
         130                     135              140

Asp Pro Val Thr Ser Glu His Glu Leu Thr Cys Gln Ala Glu Gly Tyr
145                     150                     155              160

Pro Lys Ala Glu Val Ile Trp Thr Ser Ser Asp His Gln Val Leu Ser
                   165                     170              175

Gly Asp


<210> 23
<211> 866
<212> DNA
<213> Homo sapiens

<400> 23
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<210> 24
<211> 267
<212> PRT
<213> Homo sapiens

<400> 24

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Met Arg Gly Val Ser Cys Leu Gln Val Leu Leu Leu Leu Val Leu Ala
 1               5                   10                  15

Cys Gly Gln Pro Arg Met Ser Ser Arg Ile Val Gly Gly Arg Asp Gly
            20                  25                  30

Arg Asp Gly Glu Trp Pro Trp Gln Ala Ser Ile Gln His Arg Gly Ala
        35                  40                  45

His Val Cys Gly Gly Ser Leu Ile Ala Pro Gln Trp Val Leu Thr Ala
    50                  55                  60

Ala His Cys Phe Pro Arg Ala Leu Pro Ala Glu Tyr Arg Val Arg Leu
65                  70                  75                  80

Gly Ala Leu Arg Leu Gly Ser Thr Ser Pro Arg Thr Leu Ser Val Pro
                85                  90                  95

Val Arg Arg Val Leu Leu Pro Pro Asp Tyr Ser Glu Asp Gly Ala Arg
            100                 105                 110

Gly Asp Leu Ala Leu Leu Gln Leu Arg Arg Pro Val Pro Leu Ser Ala
        115                 120                 125

Arg Val Gln Pro Val Cys Leu Pro Val Pro Gly Ala Arg Pro Pro Pro
    130                 135                 140

Gly Thr Pro Cys Arg Val Thr Gly Trp Gly Ser Leu Arg Pro Gly Val
145                 150                 155                 160

Pro Leu Pro Glu Trp Arg Pro Leu Gln Gly Val Arg Val Pro Leu Leu
                165                 170                 175

Asp Ser Arg Thr Cys Asp Gly Leu Tyr His Val Gly Ala Asp Val Pro
            180                 185                 190

Gln Ala Glu Arg Ile Val Leu Pro Gly Ser Leu Cys Ala Gly Tyr Pro
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```
          195                 200                 205

Gln Gly His Lys Asp Ala Cys Gln Val Cys Thr Gln Pro Pro Gln Pro
    210                 215                 220

Pro Glu Ser Pro Pro Cys Ala Gln His Pro Pro Ser Leu Asn Ser Arg
225                 230                 235                 240

Thr Gln Asp Ile Pro Thr Gln Ala Gln Asp Pro Gly Leu Gln Pro Arg
                245                 250                 255

Gly Thr Thr Pro Gly Val Trp Asn Pro Glu Asn
            260                 265
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<210> 25
<211> 1020
<212> DNA
<213> Homo sapiens

<400> 25
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<210> 26
<211> 280
<212> PRT
<213> Homo sapiens

<400> 26
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  1               5                  10                  15
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Ala Ala Gly Thr Gln Gly Arg Lys Ser Ala Ala Cys Gly Gln Pro Arg
            20   25   30

Met Ser Ser Arg Ile Val Gly Gly Arg Asp Gly Arg Asp Gly Glu Trp
        35   40   45

Pro Trp Gln Ala Ser Ile Gln His Arg Gly Ala His Val Cys Gly Gly
    50   55   60

Ser Leu Ile Ala Pro Gln Trp Val Leu Thr Ala Ala His Cys Phe Pro
  65   70   75   80

Arg Arg Ala Leu Pro Ala Glu Tyr Arg Val Arg Leu Gly Ala Leu Arg
                85   90   95

Leu Gly Ser Thr Ser Pro Arg Thr Leu Ser Val Pro Val Arg Arg Val
            100   105   110

Leu Leu Pro Pro Asp Tyr Ser Glu Asp Gly Ala Arg Gly Asp Leu Ala
        115   120   125

Leu Leu Gln Leu Arg Arg Pro Val Pro Leu Ser Ala Arg Val Gln Pro
    130   135   140

Val Cys Leu Pro Val Pro Gly Ala Arg Pro Pro Pro Gly Thr Pro Cys
145   150   155   160

Arg Val Thr Gly Trp Gly Ser Leu Arg Pro Gly Val Pro Leu Pro Glu
            165   170   175

Trp Arg Pro Leu Gln Gly Val Arg Val Pro Leu Leu Asp Ser Arg Thr
            180   185   190

Cys Asp Gly Leu Tyr His Val Gly Ala Asp Val Pro Gln Ala Glu Arg
        195   200   205

Ile Val Leu Pro Gly Ser Leu Cys Ala Gly Tyr Pro Gln Gly His Lys
    210   215   220

Asp Ala Cys Gln Gly Asp Ser Gly Gly Pro Leu Thr Cys Leu Gln Ser
225   230   235   240

Gly Ser Trp Val Leu Val Gly Val Val Ser Trp Gly Lys Gly Cys Ala
            245   250   255

Leu Pro Asn Arg Pro Gly Val Tyr Thr Ser Val Ala Thr Tyr Ser Pro
        260   265   270

Trp Ile Gln Ala Arg Val Ser Phe
        275   280

<210> 27
<211> 1267
<212> DNA
<213> Homo sapiens

<400> 27
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catcatctac aatggctacc ccagtgaaga gtatgaagtc accactgaag atgggtatat 180
actccttgtc aacagaattc cttatgggcg aacacatgct aggagcacag gtccccggcc 240
agttgtgtat atgcagcatg ccctgtttgc agacaatgcc tactggcttg agaattatgc 300
taatggaagc cttggattcc ttctagcaga tgcaggttat gatgtatgga tgggaaacag 360
tcggggaaac acttggtcaa gaagacacaa aacactctca gagacagatg agaaattctg 420
ggcctttggt tttgatgaaa tggccaaata tgatctccca ggagtaatag acttcattgt 480
aaataaaact ggtcaggaga aattgtattt cattggacat tcacttggca ctacaatagg 540
gtttgtagcc ttttccacca tgcctgaact ggcacaaaga atcaaaatga attttgcctt 600
gggtcctacg atctcattca aatatcccac gggcattttt accaggtttt ttctacttcc 660
aaattccata atcaaggctg tttttggtac caaaggtttc tttttagaag ataagaaaac 720
gaagatagct tctaccaaaa tctgcaacaa taagatactc tggttgatat gtagcgaatt 780
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tcaacggatg tacagtgaaa tcatagcttt aatgaaggca tattcctaaa tgcaatgcat 1140
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<210> 28
<211> 373
<212> PRT
<213> Homo sapiens

<400> 28
Met Trp Leu Leu Leu Thr Thr Thr Cys Leu Ile Cys Gly Thr Leu Asn
 1   5   10   15

Ala Gly Gly Phe Leu Asp Leu Glu Asn Glu Val Asn Pro Glu Val Trp
            20   25   30

Met Asn Thr Ser Glu Ile Ile Ile Tyr Asn Gly Tyr Pro Ser Glu Glu

                                32

Tyr Glu Val Thr Thr Glu Asp Gly Tyr Ile Leu Leu Val Asn Arg Ile
    50   55   60

Pro Tyr Gly Arg Thr His Ala Arg Ser Thr Gly Pro Arg Pro Val Val
  65   70   75   80

Tyr Met Gln His Ala Leu Phe Ala Asp Asn Ala Tyr Trp Leu Glu Asn
                85   90   95

Tyr Ala Asn Gly Ser Leu Gly Phe Leu Leu Ala Asp Ala Gly Tyr Asp
            100   105   110

Val Trp Met Gly Asn Ser Arg Gly Asn Thr Trp Ser Arg Arg His Lys
        115   120   125

Thr Leu Ser Glu Thr Asp Glu Lys Phe Trp Ala Phe Gly Phe Asp Glu
    130   135   140

Met Ala Lys Tyr Asp Leu Pro Gly Val Ile Asp Phe Ile Val Asn Lys
145   150   155   160

Thr Gly Gln Glu Lys Leu Tyr Phe Ile Gly His Ser Leu Gly Thr Thr
                165   170   175

Ile Gly Phe Val Ala Phe Ser Thr Met Pro Glu Leu Ala Gln Arg Ile
            180   185   190

Lys Met Asn Phe Ala Leu Gly Pro Thr Ile Ser Phe Lys Tyr Pro Thr
        195   200   205

Gly Ile Phe Thr Arg Phe Phe Leu Leu Pro Asn Ser Ile Ile Lys Ala
    210   215   220

Val Phe Gly Thr Lys Gly Phe Phe Leu Glu Asp Lys Lys Thr Lys Ile
225   230   235   240

Ala Ser Thr Lys Ile Cys Asn Asn Lys Ile Leu Trp Leu Ile Cys Ser
                245   250   255

Glu Phe Met Ser Leu Trp Ala Gly Ser Asn Lys Lys Asn Met Asn Gln
            260   265   270

Leu Tyr His Ser Asp Glu Phe Arg Ala Tyr Asp Trp Gly Asn Asp Ala
        275   280   285

Asp Asn Met Lys His Tyr Asn Gln Ser His Pro Pro Ile Tyr Asp Leu

```
        290                   295                    300

Thr Ala Met Lys Val Pro Thr Ala Ile Trp Ala Gly Gly His Asp Val
305                   310                   315                   320

Leu Val Thr Pro Gln Asp Val Ala Arg Ile Leu Pro Gln Ile Lys Ser
              325                   330                   335

Leu His Tyr Phe Lys Leu Leu Pro Asp Trp Asn His Phe Asp Phe Val
              340                   345                   350

Trp Gly Leu Asp Ala Pro Gln Arg Met Tyr Ser Glu Ile Ile Ala Leu
          355                   360                   365

Met Lys Ala Tyr Ser
    370
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<400> 29
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catcatctac aatggctacc ccagtgaaga gtatgaagtc accactgaag atgggtatat 180
actccttgtc gacagaattc cttatgggcg aacacatgct gggagcacag gtccccggcc 240
agttgtgtat atgcagcatg ccctgtttgc agacaatgcc tactggcttg agaattatcc 300
taatggaagc cttggattcc ttctagcaga tgcaggttat gatgtatgga tgggaaacag 360
tcgggggaaac acttggtcaa gaagacacaa aacactctca gagacagatg agaaattctg 420
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gtttgtagcc ttttccacca tgcctgaact ggcacaaaga atcaaaatga attttgcctt 600
gggtcctacg atctcattca aatatcccac gggcattttt accaggtttt ttctacttcc 660
aaattccata atcaaggctg tttttggtac caaaggtttc tttttagaag ataagaaaac 720
gaagatagct tctaacaaaa tctgcaacaa taagatactc tggttgatat gtagcgaatt 780
tatgtcctta tgggctggat ccaacaagaa aaatatgaat cagctttacc actctgatga 840
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<210> 30
<211> 373
<212> PRT
<213> Homo sapiens

<400> 30

Met Trp Leu Leu Leu Thr Thr Thr Cys Leu Ile Cys Gly Thr Leu Asn
1   5   10   15

Ala Gly Gly Phe Leu Asp Leu Glu Asn Glu Val Asn Pro Glu Val Trp
            20   25   30

Met Asn Thr Ser Glu Ile Ile Ile Tyr Asn Gly Tyr Pro Ser Glu Glu
        35   40   45

Tyr Glu Val Thr Thr Glu Asp Gly Tyr Ile Leu Leu Val Asp Arg Ile
    50   55   60

Pro Tyr Gly Arg Thr His Ala Gly Ser Thr Gly Pro Arg Pro Val Val
65   70   75   80

Tyr Met Gln His Ala Leu Phe Ala Asp Asn Ala Tyr Trp Leu Glu Asn
                85   90   95

Tyr Pro Asn Gly Ser Leu Gly Phe Leu Leu Ala Asp Ala Gly Tyr Asp
            100   105   110

Val Trp Met Gly Asn Ser Arg Gly Asn Thr Trp Ser Arg Arg His Lys
        115   120   125

Thr Leu Ser Glu Thr Asp Glu Lys Phe Trp Ala Phe Ser Phe Asp Glu
    130   135   140

Met Ala Lys Tyr Asp Leu Pro Gly Val Ile Asp Phe Ile Val Asn Lys
145   150   155   160

Thr Gly Gln Glu Lys Leu Tyr Phe Ile Gly His Ser Leu Gly Thr Thr
                165   170   175

Ile Gly Phe Val Ala Phe Ser Thr Met Pro Glu Leu Ala Gln Arg Ile
            180   185   190

Lys Met Asn Phe Ala Leu Gly Pro Thr Ile Ser Phe Lys Tyr Pro Thr
        195   200   205

Gly Ile Phe Thr Arg Phe Phe Leu Leu Pro Asn Ser Ile Ile Lys Ala
    210   215   220

35

```
Val Phe Gly Thr Lys Gly Phe Phe Leu Glu Asp Lys Lys Thr Lys Ile
225                 230                 235                 240

Ala Ser Asn Lys Ile Cys Asn Asn Lys Ile Leu Trp Leu Ile Cys Ser
                245                 250                 255

Glu Phe Met Ser Leu Trp Ala Gly Ser Asn Lys Lys Asn Met Asn Gln
            260                 265                 270

Leu Tyr His Ser Asp Glu Phe Arg Ala Tyr Asp Trp Gly Asn Gly Ala
        275                 280                 285

Asp Asn Met Lys His Tyr Asn Gln Ser His Pro Pro Ile Tyr Asp Leu
    290                 295                 300

Thr Ala Met Lys Val Pro Thr Ala Ile Trp Ala Gly Gly His Asp Val
305                 310                 315                 320

Leu Val Thr Pro Gln Asp Val Ala Arg Ile Leu Pro Gln Ile Lys Ser
                325                 330                 335

Leu His Tyr Phe Lys Leu Leu Pro Asp Trp Asn His Phe Asp Phe Val
            340                 345                 350

Trp Gly Leu Asp Ala Pro Gln Arg Met Tyr Ser Glu Ile Ile Ala Leu
        355                 360                 365

Met Lys Ala Tyr Ser
    370


<210> 31
<211> 1195
<212> DNA
<213> Homo sapiens

<400> 31
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catcatctac aatgctacc ccagtgaaga gtatgaagtc accactgaag atgggtatat  180
actccttgtc aacagaattc cttatgggcg aacacatgct aggagcacag gtccccggcc  240
agttgtgtat atgcagcatg ccctgtttgc agacaatgcc tactggcttg agaattatgc  300
taatggaagc cttggattcc ttctagcaga tgcaggttat gatgtatgga tgggaaacag  360
tcgggggaac acttggtcaa gaagacacaa aacactctca gagacagatg agaaattctg  420
ggcctttggt tttgatgaaa tggccaaata tgatctccca ggagtaatag acttcattgt  480
aaataaaact ggtcaggaga aattgtattt cattggacat tcacttggca ctacaatagg  540
gtttgtagcc ttttccacca tgcctgaact ggcacaaaga atcaaaatga attttgcctt  600
gggtcctacg atctcattca aatatcccac gggcatttt accaggtttt ttctacttcc  660
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aacaccccag gatgtggcca ggatactccc tcaaatcaag agtcttcatt actttaagct 960
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cagtgaaatc atagctttaa tgaaggcata ttcctaaatg caatgcattt acttttcgat 1080
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<210> 32
<211> 349
<212> PRT
<213> Homo sapiens

<400> 32
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Met Trp Leu Leu Leu Thr Thr Thr Cys Leu Ile Cys Gly Thr Leu Asn
 1               5                   10                  15

Ala Gly Gly Phe Leu Asp Leu Glu Asn Glu Val Asn Pro Glu Val Trp
                20                  25                  30

Met Asn Thr Ser Glu Ile Ile Ile Tyr Asn Gly Tyr Pro Ser Glu Glu
            35                  40                  45

Tyr Glu Val Thr Thr Glu Asp Gly Tyr Ile Leu Leu Val Asn Arg Ile
        50                  55                  60

Pro Tyr Gly Arg Thr His Ala Arg Ser Thr Gly Pro Arg Pro Val Val
65                  70                  75                  80

Tyr Met Gln His Ala Leu Phe Ala Asp Asn Ala Tyr Trp Leu Glu Asn
                85                  90                  95

Tyr Ala Asn Gly Ser Leu Gly Phe Leu Leu Ala Asp Ala Gly Tyr Asp
                100                 105                 110

Val Trp Met Gly Asn Ser Arg Gly Asn Thr Trp Ser Arg Arg His Lys
            115                 120                 125

Thr Leu Ser Glu Thr Asp Glu Lys Phe Trp Ala Phe Gly Phe Asp Glu
        130                 135                 140

Met Ala Lys Tyr Asp Leu Pro Gly Val Ile Asp Phe Ile Val Asn Lys
145                 150                 155                 160

Thr Gly Gln Glu Lys Leu Tyr Phe Ile Gly His Ser Leu Gly Thr Thr
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37

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                165                 170                 175

Ile Gly Phe Val Ala Phe Ser Thr Met Pro Glu Leu Ala Gln Arg Ile
            180                 185                 190

Lys Met Asn Phe Ala Leu Gly Pro Thr Ile Ser Phe Lys Tyr Pro Thr
        195                 200                 205

Gly Ile Phe Thr Arg Phe Phe Leu Leu Pro Asn Ser Ile Ile Lys Ala
    210                 215                 220

Val Phe Gly Thr Lys Gly Phe Phe Leu Glu Asp Lys Lys Thr Lys Ile
225                 230                 235                 240

Ala Ser Thr Lys Ile Cys Asn Asn Lys Ile Leu Trp Leu Ile Cys Ser
            245                 250                 255

Glu Phe Met Ser Leu Trp Ala Gly Ser Asn Lys Lys Asn Met Asn Gln
            260                 265                 270

Ser His Pro Pro Ile Tyr Asp Leu Thr Ala Met Lys Val Pro Thr Ala
        275                 280                 285

Ile Trp Ala Gly Gly His Asp Val Leu Val Thr Pro Gln Asp Val Ala
    290                 295                 300

Arg Ile Leu Pro Gln Ile Lys Ser Leu His Tyr Phe Lys Leu Leu Pro
305                 310                 315                 320

Asp Trp Asn His Phe Asp Phe Val Trp Gly Leu Asp Ala Pro Gln Arg
            325                 330                 335

Met Tyr Ser Glu Ile Ile Ala Leu Met Lys Ala Tyr Ser
            340                 345


<210> 33
<211> 1608
<212> DNA
<213> Homo sapiens

<400> 33
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cgcgggcgct ggccatggca ggccagcctg cgcctgagga gacgcgcaccg atgtggaggg   180
agcctgctca gccgccgctg ggtgtctctg gctgcgcact gcttccaaaa cagtcgttac   240
aaagtgcagg acatcattgt gaaccctgac gcacttgggg ttttacgcaa tgacattgcc   300
ctgctgagac tggcctcttc tgtcacctac aatgcgtaca tccagcccat ttgcatcgag   360
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ttaaacaaca ccaggtgtaa ttacctgttt gaacagccct ctagccgtag tatgatctgg 540
gattccatgt tttgtgctgg tgctgaggat ggcagtgtag acacctgcaa aggtgactca 600
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ggaatggact gcggtcaacc caatccggcct ggtgtctaca ccaacatcag tgtgtacttc 720
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tttctctctt ccccctgatg ccacaagttg agggaggtcc ttggggcatg gtatgatgcc 1560
ccagagctct agcagcccct aggtgaggct gtgggcaccc aggcagct         1608
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Met Gly Ala Arg Gly Ala Leu Leu Leu Ala Leu Leu Leu Ala Arg Ala
 1               5                   10                  15


Gly Leu Gly Lys Pro Glu Ala Cys Gly His Arg Glu Ile His Ala Leu
            20                  25                  30


Val Ala Gly Gly Val Glu Ser Ala Arg Gly Arg Trp Pro Trp Gln Ala
        35                  40                  45


Ser Leu Arg Leu Arg Arg Arg His Arg Cys Gly Gly Ser Leu Leu Ser
    50                  55                  60


Arg Arg Trp Val Leu Ser Ala Ala His Cys Phe Gln Asn Ser Arg Tyr
65                  70                  75                  80


Lys Val Gln Asp Ile Ile Val Asn Pro Asp Ala Leu Gly Val Leu Arg
                85                  90                  95


Asn Asp Ile Ala Leu Leu Arg Leu Ala Ser Ser Val Thr Tyr Asn Ala
```

Tyr Ile Gln Pro Ile Cys Ile Glu Ser Ser Thr Phe Asn Phe Val His
     115   120   125

Arg Pro Asp Cys Trp Val Thr Gly Trp Gly Leu Ile Ser Pro Ser Gly
    130   135   140

Thr Pro Leu Pro Pro Pro Tyr Asn Leu Arg Glu Ala Gln Val Thr Ile
145   150   155   160

Leu Asn Asn Thr Arg Cys Asn Tyr Leu Phe Glu Gln Pro Ser Ser Arg
     165   170   175

Ser Met Ile Trp Asp Ser Met Phe Cys Ala Gly Ala Glu Asp Gly Ser
     180   185   190

Val Asp Thr Cys Lys Gly Asp Ser Gly Gly Pro Leu Val Cys Asp Lys
     195   200   205

Asp Gly Leu Trp Tyr Gln Val Gly Ile Val Ser Trp Gly Met Asp Cys
    210   215   220

Gly Gln Pro Asn Arg Pro Gly Val Tyr Thr Asn Ile Ser Val Tyr Phe
225   230   235   240

His Trp Ile Arg Arg Val Met Ser His Ser Thr Pro Arg Pro Asn Pro
     245   250   255

Ser Pro Ala Val Ala Ala Pro Cys Pro Ala Val Gly Ser Leu Thr Pro
     260   265   270

Ala Ala Ile Leu Ser Ala Pro Glu Thr Val Arg Leu Gln Trp Gly Pro
     275   280   285

Gln Tyr Trp Leu Thr Ser Ser Gly Leu Trp Ala Leu Gln Gly Gln Gly
     290   295   300

Trp Asp Cys Leu Leu Asp Gln Ile Pro Ala Pro Phe Val Ser Phe Ala
305   310   315   320

Asn Lys Tyr Val Cys Met Phe Lys Leu Met Pro Tyr Arg Ala Phe Cys
     325   330   335

Gly Pro Lys Gly Phe Arg Gly Gln Leu Pro Pro Leu His Ser Cys Pro
     340   345   350

Val Gln Ala Lys Thr Pro Pro Glu Leu Leu Asn Cys Tyr Pro Gly Phe

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         355                 360                 365

Cys Cys Glu Gln Gln His Pro Leu Val Ile Ser Ile Gly Lys Ile Ile
    370                 375                 380

Asp Gly Arg Ala Val Val Leu Gln Cys Val Arg Gly Val Gly Arg His
385                 390                 395                 400

Gly Leu Gly Val Pro Trp Arg Lys Cys Ser Gln Cys Ser His Pro Arg
                405                 410                 415

Val Pro Asn His Thr Asn Ala Arg Cys Ser
            420                 425


<210> 35
<211> 1539
<212> DNA
<213> Homo sapiens

<400> 35
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gcccttata atgcagaaaa tgtggagaat cctggctcag agaagagagc aagaagggca 360
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ggagatctgt ccagagtagg ggacttgagc aagaagcctg atatattttt tgtaaccaca 480
tattttattt ctagtactgg aaacaaatgg cgctccagga gaaagatgtt aacacccact 540
ttccattttta ccattctgga agatttctta gatatcatga atgaacaagc aaatatattg 600
gttaagaaac ttgaaaaaca cattaaccaa gaagcattta actgctttt ttacatcact 660
ctttgtgcct tagatatcat ctgtgagaaa atggcccaaa caggaaatca cactccactg 720
ggaaggcaaa tgggggggacg ggaaagggtg acgggctctt cagcgcggtt ctacgaccgc 780
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agagaagagg gtaaagggag gaagaagaat tctgaaatat acaaggacaa agcaggatct 960
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gatggcaggg gctctgcccc ctccaaaaat aaacgcaggg cctttcttga cttgctttta 1260
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gtgggcgtcc tcccctgctc caccagtgtg cctcggtgct ttacgtttgc cttatcatgc 1440
tttctgcagt tggcagatga aatgaaatcg gaagttcagc agactcctct tatgcatttg 1500
gatcaggctt ccgctcataa attcaaggaa agctattaa                       1539
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41

<210> 36
<211> 512
<212> PRT
<213> Homo sapiens

<400> 36

Met Ala Gly Leu Trp Leu Gly Leu Val Trp Gln Lys Leu Leu Leu Trp
1   5   10   15

Gly Ala Ala Ser Ala Val Ser Leu Ala Gly Ala Ser Leu Val Leu Ser
            20   25   30

Leu Leu Gln Arg Val Ala Ser Tyr Ala Arg Lys Trp Gln Gln Met Arg
        35   40   45

Pro Ile Pro Thr Val Ala Arg Ala Tyr Pro Leu Val Gly His Ala Leu
    50   55   60

Leu Met Lys Pro Asp Gly Arg Glu Phe Phe Gln Gln Ile Ile Glu Tyr
65   70   75   80

Thr Glu Glu Tyr Arg His Met Pro Leu Leu Lys Leu Trp Val Gly Pro
                85   90   95

Val Pro Met Val Ala Leu Tyr Asn Ala Glu Asn Val Glu Asn Pro Gly
            100   105   110

Ser Glu Lys Arg Ala Arg Arg Ala Asp Arg Ile Ser Ala Ala Val Gly
        115   120   125

Leu Val Leu Ile Glu Val Gly Val Val Asp Ala Asp Gly Asp Leu Ser
    130   135   140

Arg Val Gly Asp Leu Ser Lys Lys Pro Asp Ile Phe Phe Val Thr Thr
145   150   155   160

Tyr Phe Ile Ser Ser Thr Gly Asn Lys Trp Arg Ser Arg Arg Lys Met
                165   170   175

Leu Thr Pro Thr Phe His Phe Thr Ile Leu Glu Asp Phe Leu Asp Ile
            180   185   190

Met Asn Glu Gln Ala Asn Ile Leu Val Lys Lys Leu Glu Lys His Ile
        195   200   205

Asn Gln Glu Ala Phe Asn Cys Phe Phe Tyr Ile Thr Leu Cys Ala Leu
    210   215   220

42

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Asp Ile Ile Cys Glu Lys Met Ala Gln Thr Gly Asn His Thr Pro Leu
225                 230                 235                 240

Gly Arg Gln Met Gly Gly Arg Glu Arg Val Thr Gly Ser Ser Ala Arg
                245                 250                 255

Phe Tyr Asp Arg Thr Gly Leu Leu Arg Ser Ser Ser His Ala Gln Gly
                260                 265                 270

Cys Glu Trp Gly Arg His Gly Ala Thr Ala Gln Gly Gly Glu Gly Lys
            275                 280                 285

Glu Glu Gln Glu Gln Gly Val Glu Val Asp Arg Thr Arg Glu Glu Gly
    290                 295                 300

Lys Gly Arg Lys Lys Asn Ser Glu Ile Tyr Lys Asp Lys Ala Gly Ser
305                 310                 315                 320

Met Gly Lys Asn Ile Gly Ala Gln Ser Asn Asp Asp Ser Glu Tyr Val
                325                 330                 335

Arg Ala Val Tyr Arg Met Ser Glu Met Ile Phe Arg Arg Ile Lys Met
            340                 345                 350

Pro Trp Leu Trp Leu Asp Leu Trp Tyr Leu Met Phe Lys Glu Gly Trp
            355                 360                 365

Glu His Lys Lys Ser Leu Gln Ile Leu His Thr Phe Thr Asn Ser Val
    370                 375                 380

Ile Ala Glu Arg Ala Asn Glu Met Asn Ala Asn Glu Asp Cys Arg Gly
385                 390                 395                 400

Asp Gly Arg Gly Ser Ala Pro Ser Lys Asn Lys Arg Arg Ala Phe Leu
                405                 410                 415

Asp Leu Leu Leu Ser Val Thr Asp Asp Glu Gly Asn Arg Leu Ser His
            420                 425                 430

Glu Asp Ile Arg Glu Glu Val Asp Thr Phe Met Phe Glu Ala Gly Ala
            435                 440                 445

Gly Cys Asn Cys Pro Gly Ser Ser Cys Glu Leu Lys Val Gly Val Leu
    450                 455                 460

Pro Cys Ser Thr Ser Val Pro Arg Cys Phe Thr Phe Ala Leu Ser Cys
465                 470                 475                 480
```

                                   43

```
Phe Leu Gln Leu Ala Asp Glu Met Lys Ser Glu Val Gln Gln Thr Pro
              485                 490                 495

Leu Met His Leu Asp Gln Ala Ser Ala His Lys Phe Lys Glu Ser Tyr
              500                 505                 510
```

```
<210> 37
<211> 813
<212> DNA
<213> Homo sapiens

<400> 37
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tttgctattt tcgccttcgg gtcctgtggc tcctacagcg gggagacagg agcaatggtt  180
cgctgcaaca acgaagccaa ggacgtgagc tccatcatcg ttgcatttgg ctatcccttc  240
aggttgcgcc ggatccaata tgagatgccc ctctgcgatg aagagtccag ctccaagacc  300
atgcacctca tggggggactt ctctgcaccc gccgagttct tcgtgaccct tggcatctttt  360
tccttcttct ataccatggc tgccctagtt atctacctgc gcttccacaa cctctacaca  420
gagaacaaac gcttcccgct ggtggacttc tgtgtgactg tctccttcac cttcttctgg  480
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tccagcttga cagcagccat gtcagtgtgc catggagagg aagcagtgtg cagtgccggg  600
gccacgccct ctatgggcct ggccaacatc tccgtgctct ttggctttat caacttcttc  660
ctgtgggccg ggaactgttg gtttgtgttc aaggagaccc cgtggcatgg acaggggcag  720
ggccaggacc aggaccagga ccaggaccag ggccaggtgc ccagccagga gagtgcagct  780
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<210> 38
<211> 268
<212> PRT
<213> Homo sapiens

<400> 38
Ser Ser Leu Ser Pro Thr Pro Ala Leu Asn Val Cys Thr Cys Gly Glu
  1               5                  10                  15

Ser Arg Leu Val Leu Asp Phe Gly Gln Leu Arg Pro Ser Asp Ser Gln
             20                  25                  30

Arg Gly Phe Thr Leu Ser Gln Leu Phe Ala Ile Phe Ala Phe Gly Ser
            35                  40                  45
```

Cys Gly Ser Tyr Ser Gly Glu Thr Gly Ala Met Val Arg Cys Asn Asn
        50   55   60

Glu Ala Lys Asp Val Ser Ser Ile Ile Val Ala Phe Gly Tyr Pro Phe
  65   70   75   80

Arg Leu Arg Arg Ile Gln Tyr Glu Met Pro Leu Cys Asp Glu Glu Ser
                85   90   95

Ser Ser Lys Thr Met His Leu Met Gly Asp Phe Ser Ala Pro Ala Glu
            100   105   110

Phe Phe Val Thr Leu Gly Ile Phe Ser Phe Phe Tyr Thr Met Ala Ala
        115   120   125

Leu Val Ile Tyr Leu Arg Phe His Asn Leu Tyr Thr Glu Asn Lys Arg
    130   135   140

Phe Pro Leu Val Asp Phe Cys Val Thr Val Ser Phe Thr Phe Phe Trp
145   150   155   160

Leu Val Ala Ala Ala Ala Trp Gly Lys Gly Leu Thr Asp Val Lys Gly
                165   170   175

Ala Thr Arg Pro Ser Ser Leu Thr Ala Ala Met Ser Val Cys His Gly
            180   185   190

Glu Glu Ala Val Cys Ser Ala Gly Ala Thr Pro Ser Met Gly Leu Ala
        195   200   205

Asn Ile Ser Val Leu Phe Gly Phe Ile Asn Phe Phe Leu Trp Ala Gly
    210   215   220

Asn Cys Trp Phe Val Phe Lys Glu Thr Pro Trp His Gly Gln Gly Gln
225   230   235   240

Gly Gln Asp Gln Asp Gln Asp Gln Asp Gln Gly Gln Gly Pro Ser Gln
            245   250   255

Glu Ser Ala Ala Glu Gln Gly Ala Val Glu Lys Gln
        260   265

<210> 39
<211> 2542
<212> DNA
<213> Homo sapiens

45

<400> 39

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ctgccagtct cctccaccac tctctaacct gagagcctgt ggaacctgcc cgtctcccct 180
cctccatcag acacacctgc ctaggaaaca ggtaagttgt gcgtggggaa aggacctcgg 240
aagtcttcta aggagagtca tggcgtatta ccaggagcct tcagtggaga cctccatcat 300
caagttcaaa gaccaggact ttaccacctt gcgggatcac tgcctgagca tgggccggac 360
gtttaaggat gagacattcc ctgcagcaga ttcttccata ggccagaagc tgctccagga 420
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catcctggat gatataagca gatttgacat ccaacaagga ggcgcaggtg actgctggtt 540
cctggcagca ctgggatcct tgactcagaa cccacagtac aggcagaaga tcctgatggt 600
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gtgggtggaa gtggtgattg atgaccgcct acctgtccag ggagataaat gcctctttgt 720
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cctagagacc ttccgcaacc tctctaagga tggaaaagga ctctacctga cagaaatgga 2280
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atttatgcag ccaacagaca catgaaaaaa tgctcaccat cactggccat cagagaaacg 2460
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ctgttagagc cattgcaact tc 2542
```

<210> 40
<211> 686

46

<212> PRT
<213> Homo sapiens

<400> 40

Met Ala Tyr Tyr Gln Glu Pro Ser Val Glu Thr Ser Ile Ile Lys Phe
1   5   10   15

Lys Asp Gln Asp Phe Thr Thr Leu Arg Asp His Cys Leu Ser Met Gly
            20   25   30

Arg Thr Phe Lys Asp Glu Thr Phe Pro Ala Ala Asp Ser Ser Ile Gly
        35   40   45

Gln Lys Leu Leu Gln Glu Lys Arg Leu Ser Asn Val Ile Trp Lys Arg
    50   55   60

Pro Asp Leu Pro Gly Gly Pro Pro His Phe Ile Leu Asp Asp Ile Ser
65   70   75   80

Arg Phe Asp Ile Gln Gln Gly Gly Ala Gly Asp Cys Trp Phe Leu Ala
                85   90   95

Ala Leu Gly Ser Leu Thr Gln Asn Pro Gln Tyr Arg Gln Lys Ile Leu
            100   105   110

Met Val Gln Ser Phe Ser His Gln Tyr Ala Gly Ile Phe Arg Phe Arg
        115   120   125

Phe Trp Gln Cys Gly Gln Trp Val Glu Val Val Ile Asp Asp Arg Leu
    130   135   140

Pro Val Gln Gly Asp Lys Cys Leu Phe Val Arg Pro Arg His Gln Asn
145   150   155   160

Gln Glu Phe Trp Pro Cys Leu Leu Glu Lys Ala Tyr Ala Lys Leu Leu
                165   170   175

Gly Ser Tyr Ser Asp Leu His Tyr Gly Phe Leu Glu Asp Ala Leu Val
            180   185   190

Asp Leu Thr Gly Gly Val Ile Thr Asn Ile His Leu His Ser Ser Pro
        195   200   205

Val Asp Leu Val Lys Ala Val Lys Thr Ala Thr Lys Ala Gly Ser Leu
    210   215   220

Ile Thr Cys Ala Thr Pro Ser Gly Val Ser His Asp Thr Ala Gln Ala
225   230   235   240

47

```
Met Glu Asn Gly Leu Val Ser Leu His Ala Tyr Thr Val Thr Gly Ala
            245                 250                 255

Glu Gln Val Gln Tyr Arg Arg Gly Trp Glu Glu Ile Ile Ser Leu Trp
                260                 265                 270

Asn Pro Trp Gly Trp Gly Glu Ala Glu Trp Arg Gly Arg Trp Ser Asp
            275                 280                 285

Gly Tyr Gly Phe Trp Glu Glu Thr Cys Asp Pro Arg Lys Ser Gln Leu
    290                 295                 300

His Lys Lys Arg Glu Asp Gly Glu Phe Trp Tyr Leu Pro Phe Leu Tyr
305                 310                 315                 320

Asn Gly Val Leu Asn Leu Leu Leu Pro Lys Ser Ser Ile Pro Thr Leu
            325                 330                 335

Phe Pro Glu His Leu Arg Arg Trp Lys Ile Ala Leu Thr Asp Pro Arg
            340                 345                 350

Trp Ala Gly Pro Ser Pro Gly Gly Ala Cys Ile His Thr His Ser His
            355                 360                 365

Val Pro Asp Asn Lys Phe Phe Lys Arg Glu Glu Glu Lys Glu Lys Glu
    370                 375                 380

Cys Arg Asp Glu Thr Asn Glu Pro Ser Cys Ser Val Leu Leu Ala Phe
385                 390                 395                 400

Leu Phe Thr Ser Glu Phe Leu Asn Leu Pro Phe Ser Leu Phe Pro Thr
            405                 410                 415

Gly Trp Leu Thr Gly Met Ala Gln Arg Arg Pro Cys Pro Ala Pro Leu
            420                 425                 430

Leu Leu Ser Ala Gly Gly Val Leu Phe Phe Ser Ser Phe Arg Asn Thr
            435                 440                 445

Val Gln Ser Ser Asn Asn Lys Phe Arg Arg Asn Phe Thr Met Thr Tyr
    450                 455                 460

His Leu Ser Pro Gly Asn Tyr Val Val Val Ala Gln Thr Arg Arg Lys
465                 470                 475                 480

Ser Ala Glu Phe Leu Leu Arg Ile Phe His Phe Asn Leu Arg Met Lys
            485                 490                 495
```

```
Val Gly Met Gln Gln Gly Leu Ala Gly Glu Pro His Trp Pro His Pro
            500                     505                 510

Ile Pro Lys Ser Phe Arg Leu Leu Leu Tyr Thr Ser Arg Cys Pro Gln
            515                 520                 525

Pro Met Lys Arg Glu Thr Pro His Pro Thr Val Asn Thr Ser Val Leu
        530                     535                 540

Pro Val Leu Leu Ser Ser Gly Pro Pro Gly Asp Met Phe Ser Leu Asp
545                     550                 555                 560

Glu Cys Arg Ser Leu Val Ala Leu Met Glu Val Ser Phe Ala Val Ile
                565                 570                 575

Pro Pro Met Leu Met Phe Ser Arg Arg Phe Arg Gln Ala Leu Glu Ser
            580                 585                 590

Ser Ser Leu Thr Arg Ser Pro Val Ala Pro Asp Phe Leu Arg Gly Ile
            595                 600                 605

Phe Ile Ser Arg Glu Leu Leu His Leu Val Thr Leu Arg Tyr Ser Asp
        610                 615                 620

Ser Val Gly Arg Val Ser Phe Pro Ser Leu Val Cys Phe Leu Met Arg
625                 630                 635                 640

Leu Glu Ala Met Ala Ser Ser Gln Asn Leu Pro Phe Phe Ile Leu Glu
                645                 650                 655

Thr Phe Arg Asn Leu Ser Lys Asp Gly Lys Gly Leu Tyr Leu Thr Glu
            660                 665                 670

Met Glu Val Arg Phe Gly Lys Lys Tyr Phe Lys Val His Met
            675                 680                 685


<210> 41
<211> 1422
<212> DNA
<213> Homo sapiens

<400> 41
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ctggggggtcc tgtaccgcgc cgtgcagctg ctcatcctgc tctacttcgt gtggtacgta 180
ttcatcgtgc agaaagcta ccaggagagc gagacgggcc ccgagagctc catcatcacc 240
```

```
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gggccctcca agacctgcga ggtgttcggc tggtgcccgg tggaagatgg ggcctctgtc 480
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taccccaaat tccacttctc caagggcaac atcgccgacc gcacagacgg gtacctgaag 600
cgctgcacgt tccacgaggc ctccgacctc tactgcccca tcttcaagct gggctttatc 660
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attatcaact gggactgtga cctggaacctg cctgcatcgg agtgcaaccc caagtactcc 780
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gacaaggtgt gtacgccgag ccaccctca ggtagctggc ctgtgaccct tgcccgtgta 1200
ttgggccagg cccctcccga acccggccac cgctccgagg accagcaccc cagccctcca 1260
tcaggccagg agggcaaca aggggcagag tgtggcccag ccttcccgcc cctgcggcct 1320
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gcctccacac ccacagaccc caaaggtttg gctcaactct ga            1422


<210> 42
<211> 473
<212> PRT
<213> Homo sapiens

<400> 42
Met Ala Ala Ala Gln Pro Lys Tyr Pro Ala Gly Ala Thr Ala Arg Arg
 1               5                  10                  15

Leu Ala Arg Gly Cys Trp Ser Ala Leu Trp Asp Tyr Glu Thr Pro Lys
            20                  25                  30

Val Ile Val Val Arg Asn Arg Arg Leu Gly Val Leu Tyr Arg Ala Val
        35                  40                  45

Gln Leu Leu Ile Leu Leu Tyr Phe Val Trp Tyr Val Phe Ile Val Gln
    50                  55                  60

Lys Ser Tyr Gln Glu Ser Glu Thr Gly Pro Glu Ser Ser Ile Ile Thr
 65                  70                  75                  80

Lys Val Lys Gly Ile Thr Thr Ser Glu His Lys Val Trp Asp Val Glu
            85                  90                  95

Glu Tyr Val Lys Pro Pro Glu Ser Ile Arg Val His Asn Ala Thr Cys
            100                 105                 110
```

50

```
Leu Ser Asp Ala Asp Cys Val Ala Gly Glu Leu Asp Met Leu Gly Asn
        115                 120                 125

Gly Leu Arg Thr Gly Arg Cys Val Pro Tyr Tyr Gln Gly Pro Ser Lys
    130                 135                 140

Thr Cys Glu Val Phe Gly Trp Cys Pro Val Glu Asp Gly Ala Ser Val
145                 150                 155                 160

Ser Gln Phe Leu Gly Thr Met Ala Pro Asn Phe Thr Ile Leu Ile Lys
                165                 170                 175

Asn Ser Ile His Tyr Pro Lys Phe His Phe Ser Lys Gly Asn Ile Ala
                180                 185                 190

Asp Arg Thr Asp Gly Tyr Leu Lys Arg Cys Thr Phe His Glu Ala Ser
        195                 200                 205

Asp Leu Tyr Cys Pro Ile Phe Lys Leu Gly Phe Ile Val Glu Lys Ala
    210                 215                 220

Gly Glu Ser Phe Thr Glu Leu Ala His Lys Gly Gly Val Ile Gly Val
225                 230                 235                 240

Ile Ile Asn Trp Asp Cys Asp Leu Asp Leu Pro Ala Ser Glu Cys Asn
                245                 250                 255

Pro Lys Tyr Ser Phe Arg Arg Leu Asp Pro Lys His Val Pro Ala Ser
        260                 265                 270

Ser Gly Tyr Asn Phe Arg Phe Ala Lys Tyr Tyr Lys Ile Asn Gly Thr
        275                 280                 285

Thr Thr Arg Thr Leu Ile Lys Ala Tyr Gly Ile Arg Ile Asp Val Ile
    290                 295                 300

Val His Gly Gln Ala Gly Lys Phe Ser Leu Ile Pro Thr Ile Ile Asn
305                 310                 315                 320

Leu Ala Thr Ala Leu Thr Ser Val Gly Val Val Arg Asn Pro Leu Trp
                325                 330                 335

Gly Pro Ser Gly Cys Gly Gly Ser Thr Arg Pro Leu His Thr Gly Leu
        340                 345                 350

Cys Trp Pro Gln Gly Ser Phe Leu Cys Asp Trp Ile Leu Leu Thr Phe
        355                 360                 365

                            51
```

```
Met Asn Lys Asn Lys Val Tyr Ser His Lys Lys Phe Asp Lys Val Cys
    370                 375                 380

Thr Pro Ser His Pro Ser Gly Ser Trp Pro Val Thr Leu Ala Arg Val
385                 390                 395                 400

Leu Gly Gln Ala Pro Pro Glu Pro Gly His Arg Ser Glu Asp Gln His
                405                 410                 415

Pro Ser Pro Pro Ser Gly Gln Glu Gly Gln Gln Gly Ala Glu Cys Gly
                420                 425                 430

Pro Ala Phe Pro Pro Leu Arg Pro Cys Pro Ile Ser Ala Pro Ser Glu
        435                 440                 445

Gln Met Val Asp Thr Pro Ala Ser Glu Pro Ala Gln Ala Ser Thr Pro
        450                 455                 460

Thr Asp Pro Lys Gly Leu Ala Gln Leu
465                 470
```

```
<400> 43
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catcacgaac tctgtgacat cattcttcga gtaggtgatg ttaaaattca tgctcacaaa 180
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caacttgatc ctggtaattg tattggaatt tctcgttttg cagaaacata tggttgccgt 480
gacctttatt tggcagccac taaatacata tgccagaatt ttgaagctgt ttgccagact 540
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gctggcatga tatactgtcg ctgcaacttt gggttaactg cactttgaca aatgtgaact 1620
ctcggaaata gtatggtggt gaaacttgta ctgcatgaac atccggatgg cccagttttc 1680
tgaaacccac aagctgcatt gctttctttt taacttgaag tagcatgaag gctcaaaagt 1740
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ataatcaaaa aaaaaaaaaa aaa 1823
```

```
<210> 44
<211> 525
<212> PRT
<213> Homo sapiens
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```
<400> 44
Met Asp His Thr Ser Pro Thr Tyr Met Leu Ala Asn Leu Thr His Leu
 1               5                   10                  15

His Ser Glu Gln Leu Leu Gln Gly Leu Asn Leu Leu Arg Gln His His
            20                  25                  30

Glu Leu Cys Asp Ile Ile Leu Arg Val Gly Asp Val Lys Ile His Ala
        35                  40                  45

His Lys Val Val Leu Ala Ser Val Ser Pro Tyr Phe Lys Ala Met Phe
    50                  55                  60

Thr Gly Asn Leu Ser Glu Lys Glu Asn Ser Glu Val Glu Phe Gln Cys
65                  70                  75                  80

Ile Asp Glu Thr Ala Leu Gln Ala Ile Val Glu Tyr Ala Tyr Thr Gly
                85                  90                  95

Thr Val Phe Ile Ser Gln Asp Thr Val Glu Ser Leu Leu Pro Ala Ala
            100                 105                 110

Asn Leu Leu Gln Ile Lys Leu Val Leu Lys Glu Cys Cys Ala Phe Leu
        115                 120                 125

Glu Ser Gln Leu Asp Pro Gly Asn Cys Ile Gly Ile Ser Arg Phe Ala
    130                 135                 140

Glu Thr Tyr Gly Cys Arg Asp Leu Tyr Leu Ala Ala Thr Lys Tyr Ile
```

53

                                                                      160
145   150   155
Cys Gln Asn Phe Glu Ala Val Cys Gln Thr Glu Glu Phe Phe Glu Leu
                    165   170   175

Thr His Ala Asp Leu Asp Glu Ile Val Ser Asn Asp Cys Leu Asn Val
            180   185   190

Ala Thr Glu Glu Thr Val Phe Tyr Ala Leu Glu Ser Trp Ile Lys Tyr
        195   200   205

Asp Val Gln Glu Arg Gln Lys Tyr Leu Ala Gln Leu Leu Asn Ser Val
    210   215   220

Arg Leu Pro Leu Leu Ser Val Lys Phe Leu Thr Arg Leu Tyr Glu Ala
225   230   235   240

Asn His Leu Ile Arg Asp Asp Arg Thr Cys Lys His Leu Leu Asn Glu
                    245   250   255

Ala Leu Lys Tyr His Phe Met Pro Glu His Arg Leu Ser His Gln Thr
            260   265   270

Val Leu Met Thr Arg Pro Arg Cys Ala Pro Lys Val Leu Cys Ala Val
        275   280   285

Gly Gly Lys Ser Gly Leu Phe Ala Cys Leu Asp Arg Val Thr Ile Arg
    290   295   300

Lys His Glu Asn Ser Val Glu Cys Trp Asn Pro Asp Thr Asn Thr Trp
305   310   315   320

Thr Ser Leu Glu Arg Met Asn Glu Ser Arg Ser Thr Leu Gly Val Val
                    325   330   335

Val Leu Ala Gly Glu Leu Tyr Ala Leu Gly Gly Tyr Asp Gly Gln Ser
            340   345   350

Tyr Leu Gln Ser Val Glu Lys Tyr Ile Pro Lys Ile Arg Lys Trp Gln
        355   360   365

Pro Val Ala Pro Met Thr Thr Thr Arg Ser Cys Phe Ala Ala Ala Val
    370   375   380

Leu Asp Gly Met Ile Tyr Ala Ile Gly Gly Tyr Gly Pro Ala His Met
385   390   395   400

Asn Ser Val Glu Arg Tyr Asp Pro Ser Lys Asp Ser Trp Glu Met Val

                                    54

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              405                410                415

Ala Ser Met Ala Asp Lys Arg Ile His Phe Gly Val Gly Val Met Leu
          420                425                430

Gly Phe Ile Phe Val Val Gly Gly His Asn Gly Val Ser His Leu Ser
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Ser Ile Glu Arg Tyr Asp Pro His Gln Asn Gln Trp Thr Val Cys Arg
      450                455                460

Pro Met Lys Glu Pro Arg Thr Gly Val Gly Ala Ala Val Ile Asp Asn
465                470                475                480

Tyr Leu Tyr Val Val Gly Gly His Ser Gly Ser Ser Tyr Leu Asn Thr
              485                490                495

Val Gln Lys Tyr Asp Pro Ile Ser Asp Thr Trp Leu Asp Ser Ala Gly
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Met Ile Tyr Cys Arg Cys Asn Phe Gly Leu Thr Ala Leu
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<212> DNA
<213> Homo sapiens

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55

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<212> PRT
<213> Homo sapiens

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Glu Ser Leu Ser Gly Thr Arg Glu Ser Leu Ala Gln Gly Pro Asp Ala
            20                  25                  30


Ala Thr Asp Glu Leu Ser Ser Leu Gly Ser Asp Ser Glu Ala Asn
        35                  40                  45


Gly Phe Ala Glu Arg Arg Ile Asp Lys Gly Phe Ile Val Gly Ser
     50                  55                  60


Gln Gly Ala Glu Gly Ala Leu Glu Glu Val Pro Leu Glu Val Leu Arg
65                  70                  75                  80


Gln Arg Glu Ser Lys Trp Leu Asp Met Leu Asn Asn Trp Asp Lys Trp
                85                  90                  95


Met Ala Lys Lys His Lys Lys Ile Arg Leu Cys Gln Lys Gly Ile
            100                 105                 110


Pro Pro Ser Leu Arg Gly Arg Ala Trp Gln Tyr Leu Ser Gly Gly Lys
            115                 120                 125


Val Lys Leu Gln Gln Asn Pro Gly Lys Phe Asp Glu Leu Asp Met Ser
```

```
                    135                  140
    130
Pro Gly Asp Pro Lys Trp Leu Asp Val Ile Glu Arg Asp Leu His Arg
                         150            155                160
145
Gln Phe Pro Phe His Glu Met Phe Val Ser Arg Gly Gly His Gly Gln
              165                    170                175

Gln Asp Leu Phe Arg Val Leu Lys Ala Tyr Thr Leu Tyr Arg Pro Glu
         180                    185                190

Glu Gly Tyr Cys Gln Ala Gln Ala Pro Ile Ala Ala Val Leu Leu Met
         195                    200                205

His Met Pro Ala Glu Gln Ala Phe Trp Cys Leu Val Gln Ile Cys Glu
     210                    215                220

Lys Tyr Leu Pro Gly Tyr Tyr Ser Glu Lys Leu Glu Ala Ile Gln Leu
                         230            235                240
225
Asp Gly Glu Ile Leu Phe Ser Leu Leu Gln Lys Val Ser Pro Val Ala
              245                    250                255

His Lys His Leu Ser Arg Gln Lys Ile Asp Pro Leu Leu Tyr Met Thr
         260                    265                270

Glu Trp Phe Met Cys Ala Phe Ser Arg Thr Leu Pro Trp Ser Ser Val
         275                    280                285

Leu Arg Val Trp Asp Met Phe Phe Cys Glu Gly Val Lys Ile Ile Phe
     290                    295                300

Arg Val Gly Leu Val Leu Leu Lys His Ala Leu Gly Ser Pro Glu Lys
                         310            315                320
305
Val Lys Ala Cys Gln Gly Gln Tyr Glu Thr Ile Glu Arg Leu Arg Ser
              325                    330                335

Leu Ser Pro Lys Ile Met Gln Glu Ala Phe Leu Val Gln Glu Val Val
              340                    345                350

Glu Leu Pro Val Thr Glu Arg Gln Ile Glu Arg Glu His Leu Ile Gln
         355                    360                365

Leu Arg Arg Trp Gln Glu Thr Arg Gly Glu Leu Gln Cys Arg Ser Pro
         370                    375                380

Pro Arg Leu His Gly Ala Lys Ala Ile Leu Asp Ala Glu Pro Gly Pro
                         57
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385                  390                 395                 400
Arg Pro Ala Leu Gln Pro Ser Pro Ser Ile Arg Leu Pro Leu Asp Ala
                405                 410                 415

Pro Leu Pro Gly Ser Lys Ala Lys Pro Lys Pro Pro Lys Gln Ala Gln
                420                 425                 430

Lys Glu Gln Arg Lys Gln Met Lys Gly Arg Gly Gln Leu Glu Lys Pro
        435                 440                 445

Pro Ala Pro Asn Gln Ala Met Val Val Ala Ala Ala Gly Asp Ala Cys
    450                 455                 460

Pro Pro Gln His Val Pro Pro Lys Asp Ser Ala Pro Lys Asp Ser Ala
465                 470                 475                 480

Pro Gln Asp Leu Ala Pro Gln Val Ser Ala His His Arg Ser Gln Glu
                485                 490                 495

Ser Leu Thr Ser Gln Glu Ser Glu Asp Thr Tyr Leu
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            20                  25                  30

Val Glu Leu Ser Cys Ala Cys Pro Glu Gly Ser Arg Phe Asp Leu Asn
        35                  40                  45

Asp Val Tyr Val Tyr Trp Gln Thr Ser Glu Ser Lys Thr Val Val Thr
    50                  55                  60

Tyr His Ile Pro Gln Asn Ser Ser Leu Glu Asn Val Asp Ser Arg Tyr
65                  70                  75                  80

Arg Asn Arg Ala Leu Met Ser Pro Ala Gly Met Leu Arg Gly Asp Phe
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Ser Leu Arg Leu Phe Asn Val Thr Pro Gln Asp Glu Gln Lys Phe His
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Cys Leu Val Leu Ser Gln Ser Leu Gly Phe Gln Glu Val Leu Ser Val
115 120 125

Glu Val Thr Leu His Val Ala Ala Asn Phe Ser Val Pro Val Val Ser
130 135 140

Ala Pro His Ser Pro Ser Gln Asp Glu Leu Thr Phe Thr Cys Thr Ser
145 150 155 160

Ile Asn Gly Tyr Pro Arg Pro Asn Val Tyr Trp Ile Asn Lys Thr Asp
165 170 175

Asn Ser Leu Leu Asp Gln Ala Leu Gln Asn Asp Thr Val Phe Leu Asn
180 185 190

Met Arg Gly Leu Tyr Asp Val Val Ser Val Leu Arg Ile Ala Arg Thr
195 200 205

Pro Ser Val Asn Ile Gly Cys Cys Ile Glu Asn Val Leu Leu Gln Gln
210 215 220

Asn Leu Thr Val Gly Ser Gln Thr Gly Asn Asp Ile Gly Glu Arg Asp
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Lys Ile Thr Glu Asn Pro Val Ser Thr Gly Glu Lys Asn Ala Ala Thr
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Trp Ser Ile Leu Ala Val Leu Cys Leu Leu Val Val Val Ala Val Ala
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Gly Ser Ser Arg Phe Trp Gly Ala Gln Gly Arg Leu Gly Cys Gln Leu
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Ser Phe Arg Val Ser Lys Asn Phe Gln Lys Ala Lys Val Pro Cys Leu
325 330 335

Glu Gln Leu Leu Phe Leu Glu Thr Gln Arg Ser Pro Arg Trp Cys Ala

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Trp His Phe Leu Gln Pro Pro Leu Gly Met Gly Trp His Pro Gly Val
      355                 360                 365

His Phe Val Thr Leu Arg Trp Asp Phe Pro Asn Met His Arg Ser Arg
    370                 375                 380

Glu Thr Ser Ala Arg Pro Pro Arg Ser Pro Val Pro Ser Pro Asp Gln
385                 390                 395                 400

Gly Val Gln Gly Gly Ser Arg His Arg Arg Pro Ala Pro Met Gly Cys
                405                 410                 415

Pro Glu Trp Val Gln Ala Pro Ala Pro Ser Pro Arg Gly Val Ser Arg
                420                 425                 430

Ala Gly Pro Gly Thr Gly Ala Gln Pro Leu Trp Gly Val Arg Ser Gly
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Ser Gly His Arg Gln Leu Leu Ser Val Ala Ala Thr Pro Ala Ala Leu
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Val Cys Pro Ser Val Pro Gly Ala Thr
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<213> Homo sapiens

<400> 50

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            20                  25                  30

Asp Ala Leu Leu Thr Leu Leu Leu Gly Ala Ser Leu Gly Leu Leu Leu
        35                  40                  45

Tyr Ala Gln Arg Asp Gly Ala Ala Pro Thr Ala Ser Ala Pro Arg Gly
    50                  55                  60

Arg Gly Arg Ala Ala Pro Arg Pro Thr Pro Gly Pro Arg Ala Phe Gln
65                  70                  75                  80

Leu Pro Asp Ala Gly Ala Ala Pro Pro Ala Tyr Glu Gly Asp Thr Pro
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Ala Pro Pro Thr Pro Thr Gly Pro Phe Asp Phe Ala Arg Tyr Leu Arg
            100                 105                 110

Ala Lys Asp Gln Arg Arg Phe Pro Leu Leu Ile Asn Gln Pro His Lys
        115                 120                 125

Cys Arg Gly Asp Gly Ala Pro Gly Gly Arg Pro Asp Leu Leu Ile Ala
    130                 135                 140

Val Lys Ser Val Ala Glu Asp Phe Glu Arg Arg Gln Ala Val Arg Gln
145                 150                 155                 160

Thr Trp Gly Ala Glu Gly Arg Val Gln Gly Ala Leu Val Arg Arg Val
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64

Phe Leu Leu Gly Val Pro Arg Gly Ala Gly Ser Gly Gly Ala Asp Glu
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Val Gly Glu Gly Ala Arg Thr His Trp Arg Ala Leu Leu Arg Ala Glu
195   200   205

Ser Leu Ala Tyr Ala Asp Ile Leu Leu Trp Ala Phe Asp Asp Thr Phe
210   215   220

Phe Asn Leu Thr Leu Lys Glu Ile His Phe Leu Ala Trp Ala Ser Ala
225   230   235   240

Phe Cys Pro Asp Val Arg Phe Val Phe Lys Gly Asp Ala Asp Val Phe
245   250   255

Val Asn Val Gly Asn Leu Leu Glu Phe Leu Ala Pro Arg Asp Pro Ala
260   265   270

Gln Asp Leu Leu Ala Gly Asp Val Ile Val His Ala Arg Pro Ile Arg
275   280   285

Thr Arg Ala Ser Lys Tyr Tyr Ile Pro Glu Ala Val Tyr Gly Leu Pro
290   295   300

Ala Tyr Pro Ala Tyr Ala Gly Gly Gly Gly Phe Val Leu Ser Gly Ala
305   310   315   320

Thr Leu His Arg Leu Ala Gly Ala Cys Ala Gln Val Glu Leu Phe Pro
325   330   335

Ile Asp Asp Val Phe Leu Gly Met Cys Leu Gln Arg Leu Arg Leu Thr
340   345   350

Pro Glu Pro His Pro Ala Phe Arg Thr Phe Gly Ile Pro Gln Pro Ser
355   360   365

Ala Ala Pro His Leu Ser Thr Phe Asp Pro Cys Phe Tyr Arg Glu Leu
370   375   380

Val Val Val His Gly Leu Ser Ala Ala Asp Ile Trp Leu Met Trp Arg
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Ala Ala Gly Pro Phe Gln Trp Asp Ser
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                20   25   30

Cys Phe Asn Pro Met Arg Cys Pro Ala Met Val Ala Tyr Cys Met Thr
            35   40   45

Thr Arg Thr Cys Glu Pro Leu Arg Gly Arg Glu Leu Lys Lys Asp Cys
        50   55   60

Ala Lys Trp Cys Thr Pro Gly Tyr Pro Leu Gln Gly Gln Val Ser Ser
65   70   75   80

Gly Thr Ala Ser Thr Gln Cys Cys Arg Glu Asp Leu Cys Asn Glu Lys
                85   90   95

Leu His Asn Ala Ala Pro Thr Arg Thr Ala Leu Ala His Ser Ala Leu
            100   105   110

Ser Leu Gly Leu Ala Leu Ser Leu Leu Ala Val Ile Leu Ala Pro Ser
        115   120   125

Leu

66

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<212> PRT
<213> Homo sapiens

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Met Lys Glu Lys Gly Leu Leu Gly Glu Phe Leu Arg Thr His Lys Tyr
        35   40   45

Asp Pro Ala Trp Lys Tyr Arg Phe Gly Asp Leu Ser Val Thr Tyr Glu
    50   55   60

Pro Met Ala Tyr Met Asp Ala Ala Tyr Phe Gly Glu Ile Ser Ile Gly
  65   70   75   80

Thr Pro Pro Gln Asn Phe Leu Val Leu Phe Asp Thr Gly Ser Ser Asn
                  85   90   95

Leu Trp Val Pro Ser Val Tyr Cys Gln Ser Gln Ala Cys Thr Ser His
              100   105   110

Ser Arg Phe Asn Pro Ser Glu Ser Ser Thr Tyr Ser Thr Asn Gly Gln
          115   120   125

Thr Phe Ser Leu Gln Tyr Gly Ser Gly Ser Leu Thr Gly Phe Phe Gly
      130   135   140

Tyr Asp Thr Leu Thr Val Gln Ser Ile Gln Val Pro Asn Gln Glu Phe
145   150   155   160

Gly Leu Ser Glu Asn Glu Pro Gly Thr Asn Phe Val Tyr Ala Gln Phe
                  165   170   175

Asp Gly Ile Met Gly Leu Ala Tyr Pro Ala Leu Ser Val Asp Glu Ala
              180   185   190

Thr Thr Ala Met Gln Gly Met Val Gln Glu Gly Ala Leu Thr Ser Pro
          195   200   205

Val Phe Ser Val Tyr Leu Ser Asn Gln Gln Gly Ser Ser Gly Gly Ala
      210   215   220

Val Val Phe Gly Gly Val Asp Ser Ser Leu Tyr Thr Gly Gln Ile Tyr
225   230   235   240

Trp Ala Pro Val Thr Gln Glu Leu Tyr Trp Gln Ile Gly Ile Glu Glu
              245   250   255

Phe Leu Ile Gly Gly Gln Ala Ser Gly Trp Cys Ser Glu Gly Cys Gln
              260   265   270

Ala Ile Val Asp Thr Gly Thr Ser Leu Leu Thr Val Pro Gln Gln Tyr
          275   280   285

Met Ser Ala Leu Leu Gln Ala Thr Gly Ala Gln Glu Asp Glu Tyr Gly
      290   295   300

68

Gln Phe Leu Val Asn Cys Asn Ser Ile Gln Asn Leu Pro Ser Leu Thr
305   310   315   320

Phe Ile Ile Asn Gly Val Glu Phe Pro Leu Pro Pro Ser Ser Tyr Ile
                    325   330   335

Leu Ser Asn Asn Gly Gln Pro Leu Trp Ile Leu Gly Asp Val Phe Leu
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Arg Ser Tyr Tyr Ser Val Tyr Asp Leu Gly Asn Asn Arg Val Gly Phe
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Ala Thr Ala Ala
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<212> PRT
<213> Homo sapiens


<400> 56
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             20                  25                  30


Glu Glu Ser Pro Leu Ser Pro Pro Pro Glu Ala Ser Arg Leu Ser Pro
         35                  40                  45


Pro Pro Glu Asp Ser Pro Met Ser Pro Pro Pro Glu Glu Ser Pro Met
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Ser Pro Pro Pro Glu Val Ser Arg Leu Ser Pro Leu Pro Val Val Ser
65   70   75   80

Arg Leu Ser Pro Pro Pro Glu Glu Ser Pro Leu Ser Pro Pro Pro Glu
                    85   90   95

Glu Ser Pro Thr Ser Pro Pro Pro Glu Ala Ser Arg Leu Ser Pro Pro
            100   105   110

Pro Glu Asp Ser Pro Thr Ser Pro Pro Pro Glu Asp Ser Pro Ala Ser
        115   120   125

Pro Pro Pro Glu Asp Ser Leu Met Ser Leu Pro Leu Glu Glu Ser Pro
    130   135   140

Leu Leu Pro Leu Pro Glu Glu Pro Gln Leu Cys Pro Arg Ser Glu Gly
145   150   155   160

Pro His Leu Ser Pro Arg Pro Glu Glu Pro His Leu Ser Pro Arg Pro
            165   170   175

Glu Glu Pro His Leu Ser Pro Gln Ala Glu Glu Pro His Leu Ser Pro
            180   185   190

Gln Pro Glu Glu Pro Cys Leu Cys Ala Val Pro Glu Glu Pro His Leu
        195   200   205

Ser Pro Gln Ala Glu Gly Pro His Leu Ser Pro Gln Pro Glu Glu Leu
    210   215   220

His Leu Ser Pro Gln Thr Glu Glu Pro His Leu Ser Pro Val Pro Glu
225   230   235   240

Glu Pro Cys Leu Ser Pro Gln Pro Glu Glu Ser His Leu Ser Pro Gln
            245   250   255

Ser Glu Glu Pro Cys Leu Ser Pro Arg Pro Glu Glu Ser His Leu Ser
        260   265   270

Pro Glu Leu Glu Lys Pro Pro Leu Ser Pro Arg Pro Glu Lys Pro Pro
        275   280   285

Glu Glu Pro Gly Gln Cys Pro Ala Pro Glu Glu Leu Pro Leu Phe Pro
    290   295   300

Pro Pro Gly Glu Pro Ser Leu Ser Pro Leu Leu Gly Glu Pro Ala Leu

                                              315   320
305   310

Ser Glu Pro Gly Glu Pro Pro Leu Ser Pro Leu Pro Glu Glu Leu Pro
                    325   330   335

Leu Ser Pro Ser Gly Glu Pro Ser Leu Ser Pro Gln Leu Met Pro Pro
               340   345   350

Asp Pro Leu Pro Pro Pro Leu Ser Pro Ile Ile Thr Ala Ala Ala Pro
          355   360   365

Pro Ala Leu Ser Pro Leu Gly Glu Leu Glu Tyr Pro Phe Gly Ala Lys
     370   375   380

Gly Asp Ser Asp Pro Glu Ser Pro Leu Ala Ala Pro Ile Leu Glu Thr
385   390   395   400

Pro Ile Ser Pro Pro Pro Glu Ala Asn Cys Thr Asp Pro Glu Pro Val
               405   410   415

Pro Pro Met Ile Leu Pro Pro Ser Pro Gly Ser Pro Val Gly Pro Ala
          420   425   430

Ser Pro Ile Leu Met Glu Pro Leu Pro Pro Gln Cys Ser Pro Leu Leu
          435   440   445

Gln His Ser Leu Val Pro Gln Asn Ser Pro Pro Ser Gln Cys Ser Pro
     450   455   460

Pro Ala Leu Pro Leu Ser Val Pro Ser Pro Leu Ser Pro Ile Gly Lys
          465   470   475   480

Val Val Gly Val Ser Asp Glu Ala Glu Leu His Glu Met Glu Thr Glu
               485   490   495

Lys Val Ser Glu Pro Glu Cys Pro Ala Leu Glu Pro Ser Ala Thr Ser
               500   505   510

Pro Leu Pro Ser Pro Met Gly Asp Leu Ser Cys Pro Ala Pro Ser Pro
          515   520   525

Ala Pro Ala Leu Asp Asp Phe Ser Gly Leu Gly Glu Asp Thr Ala Pro
     530   535   540

Leu Asp Gly Ile Asp Ala Pro Gly Ser Gln Pro Glu Pro Gly Gln Thr
545   550   555   560

Pro Gly Ser Leu Ala Ser Glu Leu Lys Gly Ser Pro Val Leu Leu Asp

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Pro Glu Glu Leu Ala Pro Val Thr Pro Met Glu Val Tyr Pro Glu Cys
        580   585   590

Lys Gln Thr Ala Gly Arg Gly Ser Pro Cys Glu Glu Gln Glu Glu Pro
      595   600   605

Arg Ala Pro Val Ala Pro Thr Pro Pro Thr Leu Ile Lys Ser Asp Ile
    610   615   620

Val Asn Glu Ile Ser Asn Leu Ser Gln Gly Asp Ala Ser Ala Ser Phe
625   630   635   640

Pro Gly Ser Glu Pro Leu Leu Gly Ser Pro Asp Pro Glu Gly Gly Gly
          645   650   655

Ser Leu Ser Met Glu Leu Gly Val Ser Thr Asp Val Ser Pro Ala Arg
         660   665   670

Asp Glu Gly Ser Leu Arg Leu Cys Thr Asp Ser Leu Pro Glu Thr Asp
      675   680   685

Asp Ser Leu Leu Cys Asp Ala Gly Thr Ala Ile Ser Gly Gly Lys Ala
    690   695   700

Glu Gly Glu Lys Gly Arg Arg Arg Ser Ser Pro Ala Arg Ser Arg Ile
705   710   715   720

Lys Gln Gly Arg Ser Ser Ser Phe Pro Gly Arg Arg Arg Pro Arg Gly
          725   730   735

Gly Ala His Gly Gly Arg Gly Arg Gly Arg Ala Arg Leu Lys Ser Thr
         740   745   750

Ala Ser Ser Ile Glu Thr Leu Val Val Ala Asp Ile Asp Ser Ser Pro
        755   760   765

Ser Lys Glu Glu Glu Glu Glu Asp Asp Asp Thr Met Gln Asn Thr Val
      770   775   780

Val Leu Phe Ser Asn Thr Asp Lys Phe Val Leu Met Gln Asp Met Cys
785   790   795   800

Val Val Cys Gly Ser Phe Gly Arg Gly Ala Glu Gly His Leu Leu Ala
          805   810   815

Cys Ser Gln Cys Ser Gln Cys Tyr His Pro Tyr Cys Val Asn Ser Lys

Ile Thr Lys Val Met Leu Leu Lys Gly Trp Arg Cys Val Glu Cys Ile
        835   840   845

Val Cys Glu Val Cys Gly Gln Ala Ser Asp Pro Ser Arg Leu Leu Leu
    850   855   860

Cys Asp Asp Cys Asp Ile Ser Tyr His Thr Tyr Cys Leu Asp Pro Pro
865   870   875   880

Leu Leu Thr Val Pro Lys Gly Gly Trp Lys Cys Lys Trp Cys Val Ser
                885   890   895

Cys Met Gln Cys Gly Ala Ala Ser Pro Gly Phe His Cys Glu Trp Gln
                900   905   910

Asn Ser Tyr Thr His Cys Gly Pro Cys Ala Ser Leu Val Thr Cys Pro
        915   920   925

Ile Cys His Ala Pro Tyr Val Glu Glu Asp Leu Leu Ile Gln Cys Arg
    930   935   940

His Cys Glu Arg Trp Met His Ala Gly Cys Glu Ser Leu Phe Thr Glu
945   950   955   960

Asp Asp Val Asp His Ala Pro Asp Glu Gly Phe Asp Cys Val Ser Cys
                965   970   975

Gln Pro Tyr Val Val Lys Pro Val Ala Pro Val Ala Pro Pro Glu Leu
                980   985   990

Val Pro Met Lys Val Lys Glu Pro Glu Pro Gln Tyr Phe Arg Phe Glu
        995   1000   1005

Gly Val Trp Leu Thr Glu Thr Gly Met Ala Leu Leu Arg Asn Leu Thr
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Met Ser Pro Leu His Lys Arg Arg Gln Arg Arg Gly Arg Leu Gly Leu
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Pro Gly Glu Ala Gly Leu Glu Gly Ser Glu Pro Ser Asp Ala Leu Gly
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Pro Asp Asp Lys Lys Asp Gly Asp Leu Asp Thr Asp Glu Leu Leu Lys
            1060   1065   1070

Gly Glu Gly Gly Val Glu His Met Glu Cys Glu Ile Lys Leu Glu Gly

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Lys Lys Arg Lys Arg Lys Pro Tyr Arg Pro Gly Ile Gly Gly Phe Met
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Val Arg Gln Arg Lys Ser His Thr Arg Thr Lys Lys Gly Pro Ala Ala
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Gln Ala Glu Val Leu Ser Gly Asp Gly Gln Pro Asp Glu Val Ile Pro
         1140                    1145                    1150
Ala Asp Leu Pro Ala Glu Gly Ala Val Glu Gln Ser Leu Ala Glu Gly
      1155                    1160                    1165
Asp Glu Lys Lys Lys Gln Gln Arg Arg Gly Arg Lys Arg Ser Lys Leu
   1170                    1175                    1180
Glu Gly Met Phe Pro Ala Tyr Leu Gln Glu Ala Phe Phe Gly Lys Glu
1185                    1190                    1195                    1200
Leu Leu Asp Leu Ser Arg Lys Ala Leu Phe Ala Val Gly Val Gly Arg
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Pro Ser Phe Gly Leu Gly Thr Pro Lys Ala Lys Gly Asp Gly Gly Ser
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Glu Arg Lys Glu Leu Pro Thr Ser Gln Lys Gly Asp Asp Gly Pro Asp
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Ile Ala Asp Glu Glu Ser Arg Gly Leu Glu Gly Lys Ala Asp Thr Pro
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Gly Pro Glu Asp Gly Gly Val Lys Ala Ser Pro Val Pro Ser Asp Pro
1265                    1270                    1275                    1280
Glu Lys Pro Gly Thr Pro Gly Glu Gly Met Leu Ser Ser Asp Leu Asp
            1285                    1290                    1295
Arg Ile Ser Thr Glu Glu Leu Pro Lys Met Glu Ser Lys Asp Leu Gln
         1300                    1305                    1310
Gln Leu Phe Lys Asp Val Leu Gly Ser Glu Arg Glu Gln His Leu Gly
      1315                    1320                    1325
Cys Gly Thr Pro Gly Leu Glu Gly Ser Arg Thr Pro Leu Gln Arg Pro
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Met Asp Ser Tyr Pro Gly Leu Cys Gln Ser Pro Phe Leu Asp Ser Arg
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Glu Arg Gly Gly Phe Phe Ser Pro Glu Pro Gly Glu Pro Asp Ser Pro
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Trp Thr Gly Ser Gly Gly Thr Thr Pro Ser Thr Pro Thr Thr Pro Thr
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Thr Glu Gly Glu Gly Asp Gly Leu Ser Tyr Asn Gln Arg Ser Leu Gln
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Arg Trp Glu Lys Asp Glu Glu Leu Gly Gln Leu Ser Thr Ile Ser Pro
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Val Leu Tyr Ala Asn Ile Asn Phe Pro Asn Leu Lys Gln Asp Tyr Pro
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Asp Trp Ser Ser Arg Cys Lys Gln Ile Met Lys Leu Trp Arg Lys Val
          1460   1465   1470

Pro Ala Ala Asp Lys Ala Pro Tyr Leu Gln Lys Ala Lys Asp Asn Arg
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Ala Ala His Arg Ile Asn Lys Val Gln Lys Gln Ala Glu Ser Gln Ile
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Asn Lys Gln Thr Lys Val Gly Asp Ile Ala Arg Lys Thr Asp Arg Pro
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Ala Leu His Leu Arg Ile Pro Pro Gln Pro Gly Ala Leu Gly Ser Pro
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Pro Pro Ala Ala Ala Pro Thr Ile Phe Ile Gly Ser Pro Thr Thr Pro
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Ala Gly Leu Ser Thr Ser Ala Asp Gly Phe Leu Lys Pro Pro Ala Gly
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Ser Val Pro Gly Pro Asp Ser Pro Gly Glu Leu Phe Leu Lys Leu Pro
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Pro Ala Tyr Pro Leu Glu Pro Arg Phe Pro Thr Ala Pro Pro Thr Tyr
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Pro Pro Tyr Pro Ser Pro Thr Gly Ala Pro Ala Gln Pro Pro Met Leu
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Gly Ala Ser Ser Arg Pro Gly Ala Gly Gln Pro Gly Glu Phe His Thr
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Thr Pro Pro Gly Thr Pro Arg His Gln Pro Ser Thr Pro Asp Pro Phe
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Leu Lys Pro Arg Cys Pro Ser Leu Asp Asn Leu Ala Val Pro Glu Ser
1665   1670   1675   1680

Pro Gly Val Gly Gly Gly Lys Ala Ser Glu Pro Leu Leu Ser Pro Pro
              1685   1690   1695

Pro Phe Gly Glu Ser Arg Lys Ala Leu Glu Val Lys Lys Glu Glu Leu
          1700   1705   1710

Gly Ala Ser Ser Pro Ser Tyr Gly Pro Pro Asn Leu Gly Phe Val Asp
        1715   1720   1725

Ser Pro Ser Ser Gly Thr His Leu Gly Gly Leu Glu Leu Lys Thr Pro
    1730   1735   1740

Asp Val Phe Lys Ala Pro Leu Thr Pro Arg Ala Ser Gln Val Glu Pro
1745   1750   1755   1760

Gln Ser Pro Gly Leu Gly Leu Arg Pro Gln Glu Pro Pro Pro Ala Gln
              1765   1770   1775

Ala Leu Ala Pro Ser Pro Pro Ser His Pro Asp Ile Phe Arg Pro Gly
          1780   1785   1790

Ser Tyr Thr Asp Pro Tyr Ala Gln Pro Pro Leu Thr Pro Arg Pro Gln
        1795   1800   1805

Pro Pro Pro Pro Glu Ser Cys Cys Ala Leu Pro Pro Arg Ser Leu Pro
    1810   1815   1820

Ser Asp Pro Phe Ser Arg Val Pro Val Ser Pro Gln Ser Gln Ser Ser
1825   1830   1835   1840

Ser Gln Ser Pro Leu Thr Pro Arg Pro Leu Ser Ala Glu Ala Phe Cys

Gln Gln Ile Gln Arg Asn Thr Leu Arg Gln Glu Lys Glu Thr Ala Ala
        2115   2120   2125

Ala Ala Ala Gly Ala Val Gly Pro Pro Gly Ser Trp Gly Ala Glu Pro
   2130   2135   2140

Ser Ser Pro Ala Phe Glu Gln Leu Ser Arg Gly Gln Thr Pro Phe Ala
2145   2150   2155   2160

Gly Thr Gln Asp Lys Ser Ser Leu Val Gly Leu Pro Pro Ser Lys Leu
              2165   2170   2175

Ser Gly Pro Ile Leu Gly Pro Gly Ser Phe Pro Ser Asp Asp Arg Leu
           2180   2185   2190

Ser Arg Pro Pro Pro Pro Ala Thr Pro Ser Ser Met Asp Val Asn Ser
        2195   2200   2205

Arg Gln Leu Val Gly Gly Ser Gln Ala Phe Tyr Gln Arg Ala Pro Tyr
   2210   2215   2220

Pro Gly Ser Leu Pro Leu Gln Gln Gln Gln Gln Gln Leu Trp Gln Gln
2225   2230   2235   2240

Gln Gln Ala Thr Ala Ala Thr Ser Met Arg Phe Ala Met Ser Ala Arg
              2245   2250   2255

Phe Pro Ser Thr Pro Gly Pro Glu Leu Gly Arg Gln Ala Leu Gly Ser
           2260   2265   2270

Pro Leu Ala Gly Ile Ser Thr Arg Leu Pro Gly Pro Gly Glu Pro Val
        2275   2280   2285

Pro Gly Pro Ala Gly Pro Ala Gln Phe Ile Glu Leu Arg His Asn Val
   2290   2295   2300

Gln Lys Gly Leu Gly Pro Gly Gly Thr Pro Phe Pro Gly Gln Gly Pro
2305   2310   2315   2320

Pro Gln Arg Pro Arg Phe Tyr Pro Val Ser Glu Asp Pro His Arg Leu
              2325   2330   2335

Ala Pro Glu Gly Leu Arg Gly Leu Ala Val Ser Gly Leu Pro Pro Gln
           2340   2345   2350

Lys Pro Ser Ala Pro Pro Ala Pro Glu Leu Asn Asn Ser Leu His Pro

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        2355                    2360                  2365

Thr Pro His Thr Lys Gly Pro Thr Leu Pro Thr Gly Leu Glu Leu Val
   2370                  2375                  2380

Asn Arg Pro Pro Ser Ser Thr Glu Leu Gly Arg Pro Asn Pro Leu Ala
2385                  2390                  2395                  2400

Leu Glu Ala Gly Lys Leu Pro Cys Glu Asp Pro Glu Leu Asp Asp Asp
                 2405                  2410                  2415

Phe Asp Ala His Lys Ala Leu Glu Asp Asp Glu Glu Leu Ala His Leu
              2420                  2425                  2430

Gly Leu Gly Val Asp Val Ala Lys Gly Asp Asp Glu Leu Gly Thr Leu
        2435                  2440                  2445

Glu Asn Leu Glu Thr Asn Asp Pro His Leu Asp Asp Leu Leu Asn Gly
   2450                  2455                  2460

Asp Glu Phe Asp Leu Leu Ala Tyr Thr Asp Pro Glu Leu Asp Thr Gly
2465                  2470                  2475                  2480

Asp Lys Lys Asp Ile Phe Asn Glu His Leu Arg Leu Val Glu Ser Ala
              2485                  2490                  2495

Asn Glu Glu Ala Glu Arg Glu Ala Leu Leu Arg Gly Val Glu Pro Gly
           2500                  2505                  2510

Pro Leu Gly Pro Glu Glu Arg Pro Pro Pro Ala Ala Asp Ala Ser Glu
        2515                  2520                  2525

Pro Arg Leu Ala Ser Val Leu Pro Glu Val Lys Pro Lys Val Glu Glu
   2530                  2535                  2540

Gly Gly Arg His Pro Ser Pro Cys Gln Phe Thr Ile Ala Thr Pro Lys
2545                  2550                  2555                  2560

Val Glu Pro Ala Pro Ala Ala Asn Ser Leu Gly Leu Gly Leu Lys Pro
              2565                  2570                  2575

Gly Gln Ser Met Met Gly Ser Arg Asp Thr Arg Met Gly Thr Gly Pro
           2580                  2585                  2590

Phe Ser Ser Ser Gly His Thr Ala Glu Lys Ala Ser Phe Gly Ala Thr
        2595                  2600                  2605

Gly Gly Pro Pro Ala His Leu Leu Thr Pro Ser Pro Leu Ser Gly Pro
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Gly Gly Ser Ser Leu Leu Glu Lys Phe Glu Leu Glu Ser Gly Ala Leu
2625   2630   2635   2640

Thr Leu Pro Gly Gly Pro Ala Ala Ser Gly Asp Glu Leu Asp Lys Met
                2645   2650   2655

Glu Ser Ser Leu Val Ala Ser Glu Leu Pro Leu Leu Ile Glu Asp Leu
            2660   2665   2670

Leu Glu His Glu Lys Lys Glu Leu Gln Lys Lys Gln Gln Leu Ser Ala
        2675   2680   2685

Gln Leu Gln Pro Ala Gln Gln Gln Gln Gln Gln Gln Gln Gln His Ser
    2690   2695   2700

Leu Leu Pro Ala Pro Gly Pro Ala Gln Ala Met Ser Leu Pro His Glu
2705   2710   2715   2720

Gly Ser Ser Pro Ser Leu Ala Gly Ser Gln Gln Gln Leu Ser Leu Gly
            2725   2730   2735

Leu Ala Val Ala Arg Gln Pro Gly Leu Pro Gln Pro Leu Met Pro Thr
        2740   2745   2750

Gln Pro Pro Ala His Ala Leu Gln Gln Arg Leu Ala Pro Ser Met Ala
    2755   2760   2765

Met Val Ser Asn Gln Gly His Met Leu Ser Gly Gln His Gly Gly Gln
    2770   2775   2780

Ala Gly Leu Val Pro Gln Gln Ser Ser Gln Pro Val Leu Ser Gln Lys
2785   2790   2795   2800

Pro Met Gly Thr Met Pro Pro Ser Met Cys Met Lys Pro Gln Gln Leu
            2805   2810   2815

Ala Met Gln Gln Gln Leu Ala Asn Ser Phe Phe Pro Asp Thr Asp Leu
        2820   2825   2830

Asp Lys Phe Ala Ala Glu Asp Ile Ile Gly Pro Ile Ala Lys Ala Lys
        2835   2840   2845

Met Val Ala Leu Lys Gly Ile Lys Lys Val Met Ala Gln Gly Ser Ile
    2850   2855   2860

Gly Val Ala Pro Gly Met Asn Arg Gln Gln Val Ser Leu Leu Ala Gln

85

Arg Leu Ser Gly Gly Pro Ser Ser Asp Leu Gln Asn His Val Ala Ala
2885 2890 2895

Gly Ser Gly Gln Glu Arg Ser Ala Gly Asp Pro Ser Gln Pro Arg Pro
2900 2905 2910

Asn Pro Pro Thr Phe Ala Gln Gly Val Ile Asn Glu Ala Asp Gln Arg
2915 2920 2925

Gln Tyr Glu Glu Trp Leu Phe His Thr Gln Gln Leu Leu Gln Met Gln
2930 2935 2940

Leu Lys Val Leu Glu Glu Gln Ile Gly Val His Arg Lys Ser Arg Lys
2945 2950 2955 2960

Ala Leu Cys Ala Lys Gln Arg Thr Ala Lys Lys Ala Gly Arg Glu Phe
2965 2970 2975

Pro Glu Ala Asp Ala Glu Lys Leu Lys Leu Val Thr Glu Gln Gln Ser
2980 2985 2990

Lys Ile Gln Lys Gln Leu Asp Gln Val Arg Lys Gln Gln Lys Glu His
2995 3000 3005

Thr Asn Leu Met Ala Glu Tyr Arg Asn Lys Gln Gln Gln Gln Gln Gln
3010 3015 3020

Gln Gln Gln Gln Gln Gln Gln Gln His Ser Ala Val Leu Ala Leu Ser
3025 3030 3035 3040

Pro Ser Gln Ser Pro Arg Leu Leu Thr Lys Leu Pro Gly Gln Leu Leu
3045 3050 3055

Pro Gly His Gly Leu Gln Pro Pro Gln Gly Pro Pro Gly Gly Gln Ala
3060 3065 3070

Gly Gly Leu Arg Leu Thr Pro Gly Gly Met Ala Leu Pro Gly Gln Pro
3075 3080 3085

Gly Gly Pro Phe Leu Asn Thr Ala Leu Ala Gln Gln Gln Gln Gln Gln
3090 3095 3100

His Ser Gly Gly Ala Gly Ser Leu Ala Gly Pro Ser Gly Gly Phe Phe
3105 3110 3115 3120

Pro Gly Asn Leu Ala Leu Arg Ser Leu Gly Pro Asp Ser Arg Leu Leu

86

3130   3135
                    3125

Gln Glu Arg Gln Leu Gln Leu Gln Gln Gln Arg Met Gln Leu Ala Gln
            3140   3145   3150

Lys Leu Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln His Leu Leu
        3155   3160   3165

Gly Gln Val Ala Ile Gln Gln Gln Gln Gln Gln Gly Pro Gly Val Gln
    3170   3175   3180

Thr Asn Gln Ala Leu Gly Pro Lys Pro Gln Gly Leu Met Pro Pro Ser
3185   3190   3195   3200

Ser His Gln Gly Leu Leu Val Gln Gln Leu Ser Pro Gln Pro Pro Gln
            3205   3210   3215

Gly Pro Gln Gly Met Leu Gly Pro Ala Gln Val Ala Val Leu Gln Gln
        3220   3225   3230

Gln His Pro Gly Ala Leu Gly Pro Gln Gly Pro His Arg Gln Val Leu
    3235   3240   3245

Met Thr Gln Ser Arg Val Leu Ser Ser Pro Gln Leu Ala Gln Gln Gly
    3250   3255   3260

Gln Gly Leu Met Gly His Arg Leu Val Thr Ala Gln Gln Gln Gln Gln
3265   3270   3275   3280

Gln Gln Gln His Gln Gln Gln Gly Ser Met Ala Gly Leu Ser His Leu
                3285   3290   3295

Gln Gln Ser Leu Met Ser His Ser Gly Gln Pro Lys Leu Ser Ala Gln
            3300   3305   3310

Pro Met Gly Ser Leu Gln Gln Leu Gln Gln Gln Gln Gln Leu Gln Gln
        3315   3320   3325

Gln Gln Gln Leu Gln Gln Gln Gln Gln Gln Gln Leu Gln Gln Gln Gln
    3330   3335   3340

Gln Leu Gln Gln Gln Gln Leu Gln Gln Gln Gln Gln Gln Gln Gln Leu
3345   3350   3355   3360

Gln Gln Gln Gln Gln Gln Gln Leu Gln Gln Gln Gln Gln Gln Leu Gln
                3365   3370   3375

Gln Gln Gln Gln Gln Gln Gln Gln Gln Phe Gln Gln Gln Gln Gln Gln

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                                                         3390
                              3385                 3390
              3380
      Gln Gln Met Gly Leu Leu Asn Gln Ser Arg Thr Leu Leu Ser Pro Gln
          3395                        3400                 3405
      Gln Gln Gln Gln Gln Gln Val Ala Leu Gly Pro Gly Met Pro Ala Lys
         3410                    3415                 3420
      Pro Leu Gln His Phe Ser Ser Pro Gly Ala Leu Gly Pro Thr Leu Leu
      3425                    3430                 3435                 3440
      Leu Thr Gly Lys Glu Gln Asn Thr Val Asp Pro Ala Val Ser Ser Glu
                      3445                    3450                 3455
      Ala Thr Glu Gly Pro Ser Thr His Gln Gly Gly Pro Leu Ala Ile Gly
                 3460                    3465                 3470
      Thr Thr Pro Glu Ser Met Ala Thr Glu Pro Gly Glu Val Lys Pro Ser
              3475                    3480                 3485
      Leu Ser Gly Asp Ser Gln Leu Leu Leu Val Gln Pro Gln Pro Gln Pro
         3490                    3495                 3500
      Gln Pro Ser Ser Leu Gln Leu Gln Pro Pro Leu Arg Leu Pro Gly Gln
      3505                    3510                 3515                 3520
      Gln Gln Gln Gln Val Ser Leu Leu His Thr Ala Gly Gly Gly Ser His
                 3525                    3530                 3535
      Gly Gln Leu Gly Ser Gly Ser Ser Ser Glu Ala Ser Ser Val Pro His
                 3540                    3545                 3550
      Leu Leu Ala Gln Pro Ser Val Ser Leu Gly Asp Gln Pro Gly Ser Met
              3555                    3560                 3565
      Thr Gln Asn Leu Leu Gly Pro Gln Gln Pro Met Leu Glu Arg Pro Met
         3570                    3575                 3580
      Gln Asn Asn Thr Gly Pro Gln Pro Pro Lys Pro Gly Pro Val Leu Gln
      3585                    3590                 3595                 3600
      Ser Gly Gln Gly Leu Pro Gly Val Gly Ile Met Pro Thr Val Gly Gln
                 3605                    3610                 3615
      Leu Arg Ala Gln Leu Gln Gly Val Leu Ala Lys Asn Pro Gln Leu Arg
              3620                    3625                 3630
      His Leu Ser Pro Gln Gln Gln Gln Gln Leu Gln Ala Leu Leu Met Gln
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Arg Gln Leu Gln Gln Ser Gln Ala Val Arg Gln Thr Pro Pro Tyr Gln
　3650　　　　　　　　　　3655　　　　　　　　3660

Glu Pro Gly Thr Gln Thr Ser Pro Leu Gln Gly Leu Leu Gly Cys Gln
3665　　　　　　　　3670　　　　　　　　3675　　　　　　　　　3680

Pro Gln Leu Gly Gly Phe Pro Gly Pro Gln Thr Gly Pro Leu Gln Glu
　　　　　　　　3685　　　　　　　　3690　　　　　　　　　3695

Leu Gly Ala Gly Pro Arg Pro Gln Gly Pro Pro Arg Leu Pro Ala Pro
　　　　3700　　　　　　　　3705　　　　　　　　3710

Pro Gly Ala Leu Ser Thr Gly Pro Val Leu Gly Pro Val His Pro Thr
　　　　　3715　　　　　　　　3720　　　　　　　　3725

Pro Pro Pro Ser Ser Pro Gln Glu Pro Lys Arg Pro Ser Gln Leu Pro
　　3730　　　　　　　　3735　　　　　　　　3740

Ser Pro Ser Ser Gln Leu Pro Thr Glu Ala Gln Leu Pro Pro Thr His
3745　　　　　　　　3750　　　　　　　　3755　　　　　　　　　3760

Pro Gly Thr Pro Lys Pro Gln Gly Pro Thr Leu Glu Pro Pro Pro Gly
　　　　　　3765　　　　　　　　3770　　　　　　　　　3775

Arg Val Ser Pro Ala Ala Ala Gln Leu Ala Asp Thr Leu Phe Ser Lys
　　　　　3780　　　　　　　　3785　　　　　　　　3790

Gly Leu Gly Pro Trp Asp Pro Pro Asp Asn Leu Ala Glu Thr Gln Lys
　　　　3795　　　　　　　　3800　　　　　　　　3805

Pro Glu Gln Ser Ser Leu Val Pro Gly His Leu Asp Gln Val Asn Gly
　　3810　　　　　　　　3815　　　　　　　　3820

Gln Val Val Pro Glu Ala Ser Gln Leu Ser Ile Lys Gln Glu Pro Arg
3825　　　　　　　　3830　　　　　　　　3835　　　　　　　　　3840

Glu Glu Pro Cys Ala Leu Gly Ala Gln Ser Val Lys Arg Glu Ala Asn
　　　　　　3845　　　　　　　　3850　　　　　　　　　3855

Gly Glu Pro Ile Gly Ala Pro Gly Thr Ser Asn His Leu Leu Leu Ala
　　　　　3860　　　　　　　　3865　　　　　　　　3870

Gly Pro Arg Ser Glu Ala Gly His Leu Leu Leu Gln Lys Leu Leu Arg
　　　3875　　　　　　　　3880　　　　　　　　3885

Ala Lys Asn Val Gln Leu Ser Thr Gly Gln Gly Ser Glu Gly Leu Arg

Ala Glu Ile Asn Gly His Ile Asp Ser Lys Leu Ala Gly Leu Glu Gln
3905   3910   3915   3920

Lys Leu Gln Gly Thr Pro Ser Asn Lys Glu Asp Ala Ala Ala Arg Lys
                3925   3930   3935

Pro Leu Thr Pro Lys Pro Lys Arg Val Gln Lys Ala Ser Asp Arg Leu
           3940   3945   3950

Val Ser Ser Arg Lys Lys Leu Arg Lys Glu Asp Gly Val Arg Ala Ser
          3955   3960   3965

Glu Ala Leu Leu Lys Gln Leu Lys Gln Glu Leu Ser Leu Leu Pro Leu
      3970   3975   3980

Thr Glu Pro Ala Ile Thr Ala Asn Phe Ser Leu Phe Ala Pro Phe Gly
3985   3990   3995   4000

Ser Gly Cys Pro Val Asn Gly Gln Ser Gln Leu Arg Gly Ala Phe Gly
           4005   4010   4015

Ser Gly Ala Leu Pro Thr Gly Pro Asp Tyr Tyr Ser Gln Leu Leu Thr
          4020   4025   4030

Lys Asn Asn Leu Ser Asn Pro Pro Thr Pro Pro Ser Ser Leu Pro Pro
      4035   4040   4045

Thr Pro Pro Pro Ser Val Gln Gln Lys Met Val Asn Gly Val Thr Pro
    4050   4055   4060

Ser Glu Glu Leu Gly Glu His Pro Lys Asp Ala Ala Ser Ala Arg Asp
4065   4070   4075   4080

Ser Glu Arg Ala Leu Arg Asp Thr Ser Glu Val Lys Ser Leu Asp Leu
           4085   4090   4095

Leu Ala Ala Leu Pro Thr Pro Pro His Asn Gln Thr Glu Asp Val Arg
         4100   4105   4110

Met Glu Ser Asp Glu Asp Ser Asp Ser Pro Asp Ser Ile Val Pro Ala
        4115   4120   4125

Ser Ser Pro Glu Ser Ile Leu Gly Glu Glu Ala Pro Arg Phe Pro His
      4130   4135   4140

Leu Gly Ser Gly Arg Trp Glu Gln Glu Asp Arg Ala Leu Ser Pro Val

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                                                      4160
                                        4155
               4150
4145
Ile Pro Leu Ile Pro Arg Ala Ser Ile Pro Val Phe Pro Asp Thr Lys
                                        4170                4175
          4165
Pro Tyr Gly Ala Leu Gly Leu Glu Val Pro Gly Lys Leu Pro Val Thr
                                   4185                4190
          4180
Thr Trp Glu Lys Gly Lys Gly Ser Glu Val Ser Val Met Leu Thr Val
                              4200                4205
       4195
Ser Ala Ala Ala Ala Lys Asn Leu Asn Gly Val Met Val Ala Val Ala
                         4215                4220
   4210
Glu Leu Leu Ser Met Lys Ile Pro Asn Ser Tyr Glu Val Leu Phe Pro
                    4230                4235                4240
4225
Glu Ser Pro Ala Arg Ala Gly Thr Glu Pro Lys Lys Gly Glu Ala Glu
                         4250                4255
       4245
Gly Pro Gly Gly Lys Glu Lys Gly Leu Glu Gly Lys Ser Pro Asp Thr
                    4265                4270
       4260
Gly Pro Asp Trp Leu Lys Gln Phe Asp Ala Val Leu Pro Gly Tyr Thr
                    4280                4285
     4275
Leu Lys Ser Gln Leu Asp Ile Leu Ser Leu Leu Lys Gln Glu Ser Pro
                    4295                4300
   4290
Ala Pro Glu Pro Pro Thr Gln His Ser Tyr Thr Tyr Asn Val Ser Asn
                    4310                4315                4320
4305
Leu Asp Val Arg Gln Leu Ser Ala Pro Pro Pro Glu Glu Pro Ser Leu
                    4330                4335
       4325
Ala Pro Ser Pro Ala Ser Pro Pro Thr Glu Pro Leu Val Glu Leu Pro
                    4345                4350
     4340
Thr Glu Pro Leu Ala Glu Pro Pro Val Pro Ser Pro Leu Pro Leu Ala
                    4360                4365
       4355
Ser Ser Pro Glu Ser Ala Arg Pro Lys Pro Arg Ala Arg Pro Pro Glu
                    4375                4380
   4370
Glu Gly Glu Asp Thr Arg Pro Pro Arg Leu Lys Lys Trp Lys Gly Val
                    4390                4395                4400
   4385
Arg Trp Lys Arg Leu Arg Leu Leu Leu Thr Ile Gln Lys Gly Ser Gly
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4415
                          4410
            4405
Arg Gln Glu Asp Glu Arg Glu Val Ala Glu Phe Met Glu Gln Leu Gly
          4420   4425   4430

Thr Ala Leu Arg Pro Asp Lys Val Pro Arg Asp Met Arg Arg Cys Cys
      4435   4440   4445

Phe Cys His Glu Glu Gly Asp Gly Ala Thr Asp Gly Pro Ala Arg Leu
    4450   4455   4460

Leu Asn Leu Asp Leu Asp Leu Trp Val His Leu Asn Cys Ala Leu Trp
4465   4470   4475   4480

Ser Thr Glu Val Tyr Glu Thr Gln Gly Gly Ala Leu Met Asn Val Glu
              4485   4490   4495

Val Ala Leu His Arg Gly Leu Leu Thr Lys Cys Ser Leu Cys Gln Arg
          4500   4505   4510

Thr Gly Ala Thr Ser Ser Cys Asn Arg Met Arg Cys Pro Asn Val Tyr
      4515   4520   4525

His Phe Gly Cys Ala Ile Arg Ala Lys Cys Met Phe Phe Lys Asp Lys
    4530   4535   4540

Thr Met Leu Cys Pro Met His Lys Ile Lys Gly Pro Cys Glu Gln Glu
4545   4550   4555   4560

Leu Ser Ser Phe Ala Val Phe Arg Arg Val Tyr Ile Glu Arg Asp Glu
          4565   4570   4575

Val Lys Gln Ile Ala Ser Ile Ile Gln Arg Gly Glu Arg Leu His Met
          4580   4585   4590

Phe Arg Val Gly Gly Leu Val Phe His Ala Ile Gly Gln Leu Leu Pro
        4595   4600   4605

His Gln Met Ala Asp Phe His Ser Ala Thr Ala Leu Tyr Pro Val Gly
    4610   4615   4620

Tyr Glu Ala Thr Arg Ile Tyr Trp Ser Leu Arg Thr Asn Asn Arg Arg
4625   4630   4635   4640

Cys Cys Tyr Arg Cys Ser Ile Gly Glu Asn Asn Gly Arg Pro Glu Phe
          4645   4650   4655

Val Ile Lys Val Ile Glu Gln Gly Leu Glu Asp Leu Val Phe Thr Asp

                              92

4670
                        4665
        4660

Ala Ser Pro Gln Ala Val Trp Asn Arg Ile Ile Glu Pro Val Ala Ala
      4675   4680   4685

Met Arg Lys Glu Ala Asp Met Leu Arg Leu Phe Pro Glu Tyr Leu Lys
    4690   4695   4700

Gly Glu Glu Leu Phe Gly Leu Thr Val His Ala Val Leu Arg Ile Ala
4705   4710   4715   4720

Glu Ser Leu Pro Gly Val Glu Ser Cys Gln Asn Tyr Leu Phe Arg Tyr
              4725   4730   4735

Gly Arg His Pro Leu Met Glu Leu Pro Leu Met Ile Asn Pro Thr Gly
          4740   4745   4750

Cys Ala Arg Ser Glu Pro Lys Ile Leu Thr His Tyr Lys Arg Pro His
      4755   4760   4765

Thr Leu Asn Ser Thr Ser Met Ser Lys Ala Tyr Gln Ser Thr Phe Thr
  4770   4775   4780

Gly Glu Thr Asn Thr Pro Tyr Ser Lys Gln Phe Val His Ser Lys Ser
4785   4790   4795   4800

Ser Gln Tyr Arg Arg Leu Arg Thr Glu Trp Lys Asn Asn Val Tyr Leu
              4805   4810   4815

Ala Arg Ser Arg Ile Gln Gly Leu Gly Leu Tyr Ala Ala Lys Asp Leu
          4820   4825   4830

Glu Lys His Thr Met Val Ile Glu Tyr Ile Gly Thr Ile Ile Arg Asn
      4835   4840   4845

Glu Val Ala Asn Arg Arg Glu Lys Ile Tyr Glu Glu Gln Asn Arg Gly
    4850   4855   4860

Ile Tyr Met Phe Arg Ile Asn Asn Glu His Val Ile Asp Ala Thr Leu
4865   4870   4875   4880

Thr Gly Gly Pro Ala Arg Tyr Ile Asn His Ser Cys Ala Pro Asn Cys
          4885   4890   4895

Val Ala Glu Val Val Thr Phe Asp Lys Glu Asp Lys Ile Ile Ile Ile
          4900   4905   4910

Ser Ser Arg Arg Ile Pro Lys Gly Glu Glu Leu Thr Tyr Asp Tyr Gln

                                  93

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                          4920              4925
      4915
Phe Asp Phe Glu Asp Asp Gln His Glu Ile Pro Cys His Cys Gly Ala
                          4935              4940
   4930

Trp Asn Cys Arg Lys Trp Met Asn
4945              4950


<210> 57
<211> 376
<212> PRT
<213> Homo sapiens

<400> 57
Met Gln Trp Thr Ser Leu Leu Leu Leu Ala Gly Leu Phe Ser Leu Ser
 1               5                   10                  15

Gln Ala Gln Tyr Glu Asp Asp Pro His Trp Trp Phe His Tyr Leu Arg
            20                  25                  30

Ser Gln Gln Ser Thr Tyr Tyr Asp Pro Tyr Asp Pro Tyr Pro Tyr Glu
        35                  40                  45

Thr Tyr Glu Pro Tyr Pro Tyr Gly Val Asp Glu Gly Pro Ala Tyr Thr
    50                  55                  60

Tyr Gly Ser Pro Ser Pro Pro Asp Pro Arg Asp Cys Pro Gln Glu Cys
65                  70                  75                  80

Asp Cys Pro Pro Asn Phe Pro Thr Ala Met Tyr Cys Asp Asn Arg Asn
                85                  90                  95

Leu Lys Tyr Leu Pro Phe Val Pro Ser Arg Met Lys Tyr Val Tyr Phe
            100                 105                 110

Gln Asn Asn Gln Ile Thr Ser Ile Gln Glu Gly Val Phe Asp Asn Ala
        115                 120                 125

Thr Gly Leu Leu Trp Ile Ala Leu His Gly Asn Gln Ile Thr Ser Asp
    130                 135                 140

Lys Val Gly Arg Lys Val Phe Ser Lys Leu Arg His Leu Glu Arg Leu
145                 150                 155                 160

Tyr Leu Asp His Asn Asn Leu Thr Arg Met Pro Gly Pro Leu Pro Arg
                165                 170                 175
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94

Ser Leu Arg Glu Leu His Leu Asp His Asn Gln Ile Ser Arg Val Pro
                180   185   190

Asn Asn Ala Leu Glu Gly Leu Glu Asn Leu Thr Ala Leu Tyr Leu Gln
            195   200   205

His Asn Glu Ile Gln Glu Val Gly Ser Ser Met Arg Gly Leu Arg Ser
    210   215   220

Leu Ile Leu Leu Asp Leu Ser Tyr Asn His Leu Arg Lys Val Pro Asp
225   230   235   240

Gly Leu Pro Ser Ala Leu Glu Gln Leu Tyr Met Glu His Asn Asn Val
                245   250   255

Tyr Thr Val Pro Asp Ser Tyr Phe Arg Gly Ala Pro Lys Leu Leu Tyr
            260   265   270

Val Arg Leu Ser His Asn Ser Leu Thr Asn Asn Gly Leu Ala Ser Asn
        275   280   285

Thr Phe Asn Ser Ser Ser Leu Leu Glu Leu Asp Leu Ser Tyr Asn Gln
    290   295   300

Leu Gln Lys Ile Pro Pro Val Asn Thr Asn Leu Glu Asn Leu Tyr Leu
305   310   315   320

Gln Gly Asn Arg Ile Asn Glu Phe Ser Ile Ser Ser Phe Cys Thr Val
                325   330   335

Val Asp Val Val Asn Phe Ser Lys Leu Gln Val Leu Arg Leu Asp Gly
            340   345   350

Asn Glu Ile Lys Arg Ser Ala Met Pro Ala Asp Ala Pro Leu Cys Leu
        355   360   365

Arg Leu Ala Ser Leu Ile Glu Ile
    370   375

<210> 58
<211> 376
<212> PRT
<213> Homo sapiens

<400> 58
Met Gln Trp Ala Ser Leu Leu Leu Leu Ala Gly Leu Phe Ser Leu Ser
 1   5   10   15

95

Gln Ala Gln Tyr Glu Asp Asp Pro His Trp Trp Phe His Tyr Leu Arg
            20   25   30

Ser Gln Gln Ser Thr Tyr Tyr Asp Pro Tyr Asp Pro Tyr Pro Tyr Glu
        35   40   45

Thr Tyr Glu Pro Tyr Pro Tyr Gly Val Asp Glu Gly Pro Ala Tyr Thr
    50   55   60

Tyr Gly Ser Pro Ser Pro Pro Asp Pro Arg Asp Cys Pro Gln Glu Cys
65   70   75   80

Asp Cys Pro Pro Asn Phe Leu Thr Ala Met Tyr Cys Asp Asn Arg Asn
                85   90   95

Leu Lys Tyr Leu Pro Phe Val Pro Ser Arg Met Lys Tyr Val Tyr Phe
        100   105   110

Gln Asn Asn Gln Ile Thr Ser Ile Gln Glu Gly Val Phe Asp Asn Ala
        115   120   125

Thr Gly Leu Leu Trp Ile Ala Leu His Gly Asn Gln Ile Thr Ser Asp
    130   135   140

Lys Val Gly Arg Lys Val Phe Ser Lys Leu Arg His Leu Glu Arg Leu
145   150   155   160

Tyr Leu Asp His Asn Asn Leu Thr Arg Met Pro Gly Pro Leu Pro Arg
            165   170   175

Ser Leu Arg Glu Leu His Leu Asp His Asn Gln Ile Ser Arg Val Pro
        180   185   190

Asn Asn Ala Leu Glu Gly Leu Glu Asn Leu Thr Ala Leu Tyr Leu Gln
        195   200   205

His Asp Glu Ile Gln Glu Val Gly Ser Ser Met Arg Gly Leu Arg Ser
    210   215   220

Leu Ile Leu Leu Asp Leu Ser Tyr Asn His Leu Arg Lys Val Pro Asp
225   230   235   240

Gly Leu Pro Ser Ala Leu Glu Gln Leu Tyr Met Glu His Asn Asn Val
            245   250   255

Tyr Thr Val Pro Asp Ser Tyr Phe Arg Gly Ala Pro Lys Leu Leu Tyr
    260   265   270

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Val Arg Leu Ser His Asn Ser Leu Thr Asn Asn Gly Leu Ala Ser Asn
275                 280                 285

Thr Phe Asn Ser Ser Ser Leu Leu Glu Leu Asp Leu Ser Tyr Asn Gln
    290                 295                 300

Leu Gln Lys Ile Pro Pro Val Asn Thr Asn Leu Glu Asn Leu Tyr Leu
305                 310                 315                 320

Gln Gly Asn Arg Ile Asn Glu Phe Ser Ile Ser Ser Phe Cys Thr Val
                325                 330                 335

Val Asp Val Val Asn Phe Ser Lys Leu Gln Val Val Arg Leu Asp Gly
            340                 345                 350

Asn Glu Ile Lys Arg Ser Ala Met Pro Ala Asp Ala Pro Leu Cys Leu
        355                 360                 365

Arg Leu Ala Ser Leu Ile Glu Ile
    370                 375


<210> 59
<211> 376
<212> PRT
<213> Homo sapiens

<400> 59
Met Gln Trp Thr Ser Leu Leu Leu Leu Ala Gly Leu Phe Ser Leu Ser
  1               5                   10                  15

Gln Ala Gln Tyr Glu Asp Asp Pro His Trp Trp Phe His Tyr Leu Arg
            20                  25                  30

Ser Gln Gln Ser Thr Tyr Tyr Asp Pro Tyr Asp Pro Tyr Pro Tyr Glu
        35                  40                  45

Thr Tyr Glu Pro Tyr Pro Tyr Gly Val Asp Glu Gly Pro Ala Tyr Thr
    50                  55                  60

Tyr Gly Ser Pro Ser Pro Pro Asp Pro Arg Asp Cys Pro Gln Glu Cys
65                  70                  75                  80

Asp Cys Pro Pro Asn Phe Pro Thr Ala Met Tyr Cys Asp Asn Arg Asn
                85                  90                  95

Leu Lys Tyr Leu Pro Phe Val Pro Ser Arg Met Lys Tyr Val Tyr Phe
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97

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                100                    105                    110

Gln Asn Asn Gln Ile Thr Ser Ile Gln Glu Gly Val Phe Asp Asn Ala
        115                    120                    125

Thr Gly Leu Leu Trp Ile Ala Leu His Gly Asn Gln Ile Thr Ser Asp
    130                    135                    140

Lys Val Gly Arg Lys Val Phe Ser Lys Leu Arg His Leu Glu Arg Leu
145                    150                    155                    160

Tyr Leu Asp His Asn Asn Leu Thr Arg Met Pro Gly Pro Leu Pro Arg
                165                    170                    175

Ser Leu Arg Glu Leu His Leu Asp His Asn Gln Ile Ser Arg Val Pro
            180                    185                    190

Asn Asn Ala Leu Glu Gly Leu Glu Asn Leu Thr Ala Leu Tyr Leu Gln
        195                    200                    205

His Asn Glu Ile Gln Glu Val Gly Ser Ser Met Arg Gly Leu Arg Ser
    210                    215                    220

Leu Tyr Leu Leu Asp Leu Ser Tyr Asn His Leu Arg Lys Val Pro Asp
225                    230                    235                    240

Gly Leu Pro Ser Ala Leu Glu Gln Leu Tyr Met Glu His Asn Asn Val
                245                    250                    255

Tyr Thr Val Pro Asp Ser Tyr Phe Arg Gly Ala Pro Lys Leu Leu Tyr
            260                    265                    270

Val Arg Leu Ser His Asn Ser Leu Thr Asn Asn Gly Leu Ala Ser Asn
        275                    280                    285

Thr Phe Asn Ser Ser Ser Leu Leu Glu Leu Asp Leu Ser Tyr Asn Gln
    290                    295                    300

Leu Gln Lys Ile Pro Pro Val Asn Thr Asn Leu Glu Asn Leu Tyr Leu
305                    310                    315                    320

Gln Gly Asn Arg Ile Asn Glu Phe Ser Ile Ser Ser Phe Cys Thr Val
                325                    330                    335

Val Asp Val Val Asn Phe Ser Gln Leu Gln Val Val Arg Leu Asp Gly
            340                    345                    350

Asn Glu Met Lys Arg Ser Ala Met Pro Ala Glu Ala Pro Leu Cys Leu

                              98
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355   360   365

Arg Leu Ala Ser Leu Ile Glu Ile
    370   375

<210> 60
<211> 376
<212> PRT
<213> Rattus norvegicus

<400> 60
Met Gln Trp Ala Ser Ile Leu Leu Leu Arg Gly Leu Cys Ser Leu Ser
1   5   10   15

Gln Gly Gln Tyr Glu Glu Asp Ser His Trp Trp Leu Gln Tyr Leu Arg
            20   25   30

Asn Gln Gln Ser Thr Tyr Tyr Asp Pro Tyr Asp Thr Tyr Pro Tyr Glu
        35   40   45

Thr Ser Asp Pro Tyr Pro Tyr Glu Val Glu Glu Gly Pro Ala Tyr Ala
    50   55   60

Tyr Gly Ala Pro Pro Pro Pro Glu Pro Arg Asp Cys Pro Gln Glu Cys
65   70   75   80

Asp Cys Pro Pro Asn Phe Pro Thr Ala Met Tyr Cys Asp Asn Arg Asn
            85   90   95

Leu Lys Tyr Leu Pro Phe Val Pro Ser Arg Met Lys Tyr Val Tyr Phe
        100   105   110

Gln Asn Asn Gln Ile Ala Ala Ile Gln Glu Gly Val Phe Asp Asn Ala
    115   120   125

Thr Gly Leu Leu Trp Ile Ala Leu His Gly Asn Gln Ile Thr Ser Asp
    130   135   140

Lys Ile Gly Arg Lys Val Phe Ser Lys Leu Arg His Leu Glu Arg Leu
145   150   155   160

Tyr Leu Asp His Asn Asn Leu Thr Arg Met Pro Gly Pro Leu Pro Arg
            165   170   175

Ser Leu Arg Glu Leu His Leu Asp His Asn Gln Ile Ser Arg Val Pro
        180   185   190

99

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Asn Asn Ala Leu Glu Gly Leu Glu Asn Leu Thr Ala Leu Tyr Leu His
         195                 200                 205

His Asn Glu Ile Gln Glu Val Gly Ser Ser Met Arg Gly Leu Arg Ser
    210                 215                 220

Leu Ile Leu Leu Asp Leu Ser Tyr Asn His Leu Arg Arg Val Pro Asp
                    230                 235                 240
225

Gly Leu Pro Ser Ala Leu Glu Gln Leu Tyr Leu Glu His Asn Asn Val
                245                 250                 255

Tyr Thr Val Pro Asp Ser Tyr Phe Arg Gly Ser Pro Lys Leu Leu Tyr
            260                 265                 270

Val Arg Leu Ser His Asn Ser Leu Thr Asn Asn Gly Leu Ala Thr Asn
        275                 280                 285

Thr Phe Asn Ser Ser Ser Leu Leu Glu Leu Asp Leu Ser Tyr Asn Gln
    290                 295                 300

Leu Gln Lys Ile Pro Pro Val Asn Thr Asn Leu Glu Asn Leu Tyr Leu
                    310                 315                 320
305

Gln Gly Asn Arg Ile Asn Glu Phe Ser Ile Ser Ser Phe Cys Thr Val
                325                 330                 335

Val Asp Val Met Asn Phe Ser Lys Leu Gln Val Leu Arg Leu Asp Gly
            340                 345                 350

Asn Glu Ile Lys Arg Ser Ala Met Pro Val Asp Ala Pro Leu Cys Leu
        355                 360                 365

Arg Leu Ala Ser Leu Ile Glu Ile
    370                 375


<210> 61
<211> 376
<212> PRT
<213> Mus musculus


<400> 61
Met Gln Trp Ala Ser Val Leu Leu Leu Ala Gly Leu Cys Ser Leu Ser
  1               5                   10                  15

Gln Gly Gln Tyr Asp Glu Asp Ser His Trp Trp Ile Gln Tyr Leu Arg
            20                  25                  30
```

Asn Gln Gln Ser Thr Tyr Tyr Asp Pro Tyr Asp Pro Tyr Pro Tyr Glu
           35   40   45

Pro Ser Glu Pro Tyr Pro Tyr Gly Val Glu Glu Gly Pro Ala Tyr Ala
       50   55   60

Tyr Gly Ala Pro Pro Pro Pro Glu Pro Arg Asp Cys Pro Gln Glu Cys
 65   70   75   80

Asp Cys Pro Pro Asn Phe Pro Thr Ala Met Tyr Cys Asp Asn Arg Asn
               85   90   95

Leu Lys Tyr Leu Pro Phe Val Pro Ser Arg Met Lys Tyr Val Tyr Phe
           100   105   110

Gln Asn Asn Gln Ile Ser Ala Ile Gln Glu Gly Val Phe Asp Asn Ala
         115   120   125

Thr Gly Leu Leu Trp Val Ala Leu His Gly Asn Gln Ile Thr Ser Asp
     130   135   140

Lys Val Gly Arg Lys Val Phe Ser Lys Leu Arg His Leu Glu Arg Leu
145   150   155   160

Tyr Leu Asp His Asn Asn Leu Thr Arg Met Pro Gly Pro Leu Pro Arg
               165   170   175

Ser Leu Arg Glu Leu His Leu Asp His Asn Gln Ile Ser Arg Val Pro
           180   185   190

Asn Asn Ala Leu Glu Gly Leu Glu Asn Leu Thr Ala Leu Tyr Leu His
         195   200   205

His Asn Glu Ile Gln Glu Val Gly Ser Ser Met Arg Gly Leu Arg Ser
     210   215   220

Leu Ile Leu Leu Asp Leu Ser Tyr Asn His Leu Arg Arg Val Pro Asp
225   230   235   240

Gly Leu Pro Ser Ala Leu Glu Gln Leu Tyr Leu Glu His Asn Asn Val
               245   250   255

Tyr Thr Val Pro Asp Ser Tyr Phe Arg Gly Ser Pro Lys Leu Leu Tyr
           260   265   270

Val Arg Leu Ser His Asn Ser Leu Thr Asn Asn Gly Leu Ala Thr Asn
         275   280   285

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Thr Phe Asn Ser Ser Ser Leu Leu Glu Leu Asp Leu Ser Tyr Asn Gln
    290   295   300

Leu Gln Lys Ile Pro Pro Val Asn Thr Asn Leu Glu Asn Leu Tyr Leu
305   310   315   320

Gln Gly Asn Arg Ile Asn Glu Phe Ser Ile Ser Ser Phe Cys Thr Val
                325   330   335

Val Asp Val Met Asn Phe Ser Lys Leu Gln Val Leu Arg Leu Asp Gly
            340   345   350

Asn Glu Ile Lys Arg Ser Ala Met Pro Val Asp Ala Pro Leu Cys Leu
        355   360   365

Arg Leu Ala Asn Leu Ile Glu Ile
    370   375

<210> 62
<211> 34
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: LRRNT, Leucine
      rich repeat N-terminal domain sequence

<400> 62
Ala Cys Pro Ala Pro Cys Asn Cys Ser Pro Gly Thr Ala Val Asp Cys
  1   5   10   15

Ser Gly Arg Gly Leu Thr Glu Val Pro Leu Asp Leu Pro Ala Asp Thr
            20   25   30

Thr Leu

<210> 63
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: LRRNT, Leucine
      rich repeat N-terminal domain sequence

<400> 63

Ala Cys Pro Arg Pro Cys His Cys Ser Gly Thr Val Val Asp Cys Ser
1   5   10   15

Gly Arg Gly Leu Thr Glu Val Pro Arg Asp Leu Pro
            20   25

<210> 64
<211> 440
<212> PRT
<213> Homo sapiens

<400> 64

Met Arg Pro His Leu Ser Pro Pro Leu Gln Gln Leu Leu Leu Pro Val
1   5   10   15

Leu Leu Ala Cys Ala Ala His Ser Thr Gly Ala Leu Pro Arg Leu Cys
            20   25   30

Asp Val Leu Gln Val Leu Trp Glu Glu Gln Asp Gln Cys Leu Gln Glu
        35   40   45

Leu Ser Arg Glu Gln Thr Gly Asp Leu Gly Thr Glu Gln Pro Val Pro
    50   55   60

Gly Cys Glu Gly Met Trp Asp Asn Ile Ser Cys Trp Pro Ser Ser Val
65   70   75   80

Pro Gly Arg Met Val Glu Val Glu Cys Pro Arg Phe Leu Arg Met Leu
                85   90   95

Thr Ser Arg Asn Gly Ser Leu Phe Arg Asn Cys Thr Gln Asp Gly Trp
            100   105   110

Ser Glu Thr Phe Pro Arg Pro Asn Leu Ala Cys Gly Val Asn Val Asn
        115   120   125

Asp Ser Ser Asn Glu Lys Arg His Ser Tyr Leu Leu Lys Leu Lys Val
    130   135   140

Met Tyr Thr Val Gly Tyr Ser Ser Ser Leu Val Met Leu Leu Val Ala
145   150   155   160

Leu Gly Ile Leu Cys Ala Phe Arg Arg Leu His Cys Thr Arg Asn Tyr
                165   170   175

103

Ile His Met His Leu Phe Val Ser Phe Ile Leu Arg Ala Leu Ser Asn
180   185   190

Phe Ile Lys Asp Ala Val Leu Phe Ser Ser Asp Asp Val Thr Tyr Cys
195   200   205

Asp Ala His Arg Ala Gly Cys Lys Leu Val Met Val Leu Phe Gln Tyr
210   215   220

Cys Ile Met Ala Asn Tyr Ser Trp Leu Leu Val Glu Gly Leu Tyr Leu
225   230   235   240

His Thr Leu Leu Ala Ile Ser Phe Phe Ser Glu Arg Lys Tyr Leu Gln
245   250   255

Gly Phe Val Ala Phe Gly Trp Gly Ser Pro Ala Ile Phe Val Ala Leu
260   265   270

Trp Ala Ile Ala Arg His Phe Leu Glu Asp Val Gly Cys Trp Asp Ile
275   280   285

Asn Ala Asn Ala Ser Ile Trp Trp Ile Ile Arg Gly Pro Val Ile Leu
290   295   300

Ser Ile Leu Ile Asn Phe Ile Leu Phe Ile Asn Ile Leu Arg Ile Leu
305   310   315   320

Met Arg Lys Leu Arg Thr Gln Glu Thr Arg Gly Asn Glu Val Ser His
325   330   335

Tyr Lys Arg Leu Ala Arg Ser Thr Leu Leu Leu Ile Pro Leu Phe Gly
340   345   350

Ile His Tyr Ile Val Phe Ala Phe Ser Pro Glu Asp Ala Met Glu Ile
355   360   365

Gln Leu Phe Phe Glu Leu Ala Leu Gly Ser Phe Gln Gly Leu Val Val
370   375   380

Ala Val Leu Tyr Cys Phe Leu Asn Gly Glu Val Gln Leu Glu Val Gln
385   390   395   400

Lys Lys Trp Gln Gln Trp His Leu Arg Glu Phe Pro Leu His Pro Val
405   410   415

Ala Ser Phe Ser Asn Ser Thr Lys Ala Ser His Leu Glu Gln Ser Gln
420   425   430

104

Gly Thr Cys Arg Thr Ser Ile Ile
                              440
        435

<210> 65
<211> 440
<212> PRT
<213> Homo sapiens

<400> 65
Met Arg Pro His Leu Ser Pro Pro Leu Gln Gln Leu Leu Leu Pro Val
1   5   10   15

Leu Leu Ala Cys Ala Ala His Ser Thr Gly Ala Leu Pro Arg Leu Cys
            20   25   30

Asp Val Leu Gln Val Leu Trp Glu Glu Gln Asp Gln Cys Leu Gln Glu
        35   40   45

Leu Ser Arg Glu Gln Thr Gly Asp Leu Gly Thr Glu Gln Pro Val Pro
    50   55   60

Gly Cys Glu Gly Met Trp Asp Asn Ile Ser Cys Trp Pro Ser Ser Val
65   70   75   80

Pro Gly Arg Met Val Glu Val Glu Cys Pro Arg Phe Leu Arg Met Leu
                85   90   95

Thr Ser Arg Asn Gly Ser Leu Phe Arg Asn Cys Thr Gln Asp Gly Trp
                100   105   110

Ser Glu Thr Phe Pro Arg Pro Asn Leu Ala Cys Gly Val Asn Val Asn
            115   120   125

Asp Ser Ser Asn Glu Lys Arg His Ser Tyr Leu Leu Lys Leu Lys Val
        130   135   140

Met Tyr Thr Val Gly Tyr Ser Ser Ser Leu Val Met Leu Leu Val Ala
145   150   155   160

Leu Gly Ile Leu Cys Ala Phe Arg Arg Leu His Cys Thr Arg Asn Tyr
                165   170   175

Ile His Met His Leu Phe Val Ser Phe Ile Leu Arg Ala Leu Ser Asn
                180   185   190

Phe Ile Lys Asp Ala Val Leu Phe Ser Ser Asp Asp Val Thr Tyr Cys
            195   200   205

                              105

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Asp Ala His Arg Ala Gly Cys Lys Leu Val Met Val Leu Phe Gln Tyr
    210                 215                 220

Cys Ile Met Ala Asn Tyr Ser Trp Leu Leu Val Glu Gly Leu Tyr Leu
225                 230                 235                 240

His Thr Leu Leu Ala Ile Ser Phe Phe Ser Glu Arg Lys Tyr Leu Gln
                245                 250                 255

Gly Phe Val Ala Phe Gly Trp Gly Ser Pro Ala Ile Phe Val Ala Leu
                260                 265                 270

Trp Ala Ile Ala Arg His Phe Leu Glu Asp Val Gly Cys Trp Asp Ile
        275                 280                 285

Asn Ala Asn Ala Ser Ile Trp Trp Ile Ile Arg Gly Pro Val Ile Leu
    290                 295                 300

Ser Ile Leu Ile Asn Phe Ile Leu Phe Ile Asn Ile Leu Arg Ile Leu
305                 310                 315                 320

Met Arg Lys Leu Arg Thr Gln Glu Thr Arg Gly Asn Glu Val Ser His
                325                 330                 335

Tyr Lys Arg Leu Ala Arg Ser Thr Leu Leu Leu Ile Pro Leu Phe Gly
        340                 345                 350

Ile His Tyr Ile Val Phe Ala Phe Ser Pro Glu Asp Ala Met Glu Ile
        355                 360                 365

Gln Leu Phe Phe Glu Leu Ala Leu Gly Ser Phe Gln Gly Leu Val Val
    370                 375                 380

Ala Val Leu Tyr Cys Phe Leu Asn Gly Glu Val Gln Leu Glu Val Gln
385                 390                 395                 400

Lys Lys Trp Gln Gln Trp His Leu Arg Glu Phe Pro Leu His Pro Val
                405                 410                 415

Ala Ser Phe Ser Asn Ser Thr Lys Ala Ser His Leu Glu Gln Ser Gln
                420                 425                 430

Gly Thr Cys Arg Thr Ser Ile Ile
        435                 440


<210> 66
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<211> 440
<212> PRT
<213> Homo sapiens

<400> 66
Met Arg Pro His Leu Ser Pro Pro Leu Gln Gln Leu Leu Leu Pro Val
1   5   10   15

Leu Leu Ala Cys Ala Ala His Ser Thr Gly Ala Leu Pro Arg Leu Cys
            20   25   30

Asp Val Leu Gln Val Leu Trp Glu Glu Gln Asp Gln Cys Leu Gln Glu
        35   40   45

Leu Ser Arg Glu Gln Thr Gly Asp Leu Gly Thr Glu Gln Pro Val Pro
    50   55   60

Gly Cys Glu Gly Met Trp Asp Asn Ile Ser Cys Trp Pro Ser Ser Val
65   70   75   80

Pro Gly Arg Met Val Glu Val Glu Cys Pro Arg Phe Leu Arg Met Leu
                85   90   95

Thr Ser Arg Asn Gly Ser Leu Phe Arg Asn Cys Thr Gln Asp Gly Trp
            100   105   110

Ser Glu Thr Phe Pro Arg Pro Asn Leu Ala Cys Gly Val Asn Val Asn
        115   120   125

Asp Ser Ser Asn Glu Lys Arg His Ser Tyr Leu Leu Lys Leu Lys Val
    130   135   140

Met Tyr Thr Val Gly Tyr Ser Ser Ser Leu Val Met Leu Leu Val Ala
145   150   155   160

Leu Gly Ile Leu Cys Ala Phe Arg Arg Leu His Cys Thr Arg Asn Tyr
                165   170   175

Ile His Met His Leu Phe Val Ser Phe Ile Leu Arg Ala Leu Ser Asn
            180   185   190

Phe Ile Lys Asp Ala Val Leu Phe Ser Ser Asp Asp Val Thr Tyr Cys
        195   200   205

Asp Ala His Arg Ala Gly Cys Lys Leu Val Met Val Leu Phe Gln Tyr
    210   215   220

Cys Ile Met Ala Asn Tyr Ser Trp Leu Leu Val Glu Gly Leu Tyr Leu

107

                                              235   240
225   230

His Thr Leu Leu Ala Ile Ser Phe Phe Ser Glu Arg Lys Tyr Leu Gln
                   245   250   255

Gly Phe Val Ala Phe Gly Trp Gly Ser Pro Ala Ile Phe Val Ala Leu
           260   265   270

Trp Ala Ile Ala Arg His Phe Leu Glu Asp Val Gly Cys Trp Asp Ile
       275   280   285

Asn Ala Asn Ala Ser Ile Trp Trp Ile Ile Arg Gly Pro Val Ile Leu
   290   295   300

Ser Ile Leu Phe Asn Phe Ile Leu Phe Ile Asn Ile Leu Arg Ile Leu
305   310   315   320

Met Arg Lys Leu Arg Thr Gln Glu Thr Arg Gly Asn Gln Val Ser His
               325   330   335

Tyr Lys Arg Leu Ala Arg Ser Thr Leu Leu Leu Ile Pro Leu Phe Gly
           340   345   350

Ile His Tyr Ile Val Phe Ala Phe Ser Pro Glu Asp Ala Met Glu Ile
       355   360   365

Gln Leu Phe Phe Glu Leu Ala Leu Gly Ser Phe Gln Gly Leu Val Val
   370   375   380

Ala Val Leu Tyr Cys Phe Leu Asn Gly Glu Val Gln Leu Glu Val Gln
385   390   395   400

Lys Lys Trp Gln Gln Trp His Leu Arg Glu Phe Pro Leu His Pro Val
               405   410   415

Ala Ser Phe Ser Asn Ser Thr Lys Ala Ser His Leu Glu Gln Ser Gln
           420   425   430

Gly Thr Cys Arg Thr Ser Ile Ile
       435   440

<210> 67
<211> 440
<212> PRT
<213> Homo sapiens

<400> 67

Met Arg Pro His Leu Ser Pro Pro Leu Gln Gln Leu Leu Leu Pro Val
1   5   10   15

Leu Leu Ala Cys Ala Ala His Ser Thr Gly Ala Leu Pro Arg Leu Cys
            20   25   30

Asp Val Leu Gln Val Leu Trp Glu Glu Gln Asp Gln Cys Leu Gln Glu
        35   40   45

Leu Ser Arg Glu Gln Thr Gly Asp Leu Gly Thr Glu Gln Pro Val Pro
    50   55   60

Gly Cys Glu Gly Met Trp Asp Asn Ile Ser Cys Trp Pro Ser Ser Val
65   70   75   80

Pro Gly Arg Met Val Glu Val Glu Cys Pro Arg Phe Leu Arg Met Leu
                85   90   95

Thr Ser Arg Asn Gly Ser Leu Phe Arg Asn Cys Thr Gln Asp Gly Trp
            100   105   110

Ser Glu Thr Phe Pro Arg Pro Asn Leu Ala Cys Ala Val Asn Val Asn
        115   120   125

Asp Ser Ser Asn Glu Lys Arg His Ser Tyr Leu Leu Lys Leu Lys Val
    130   135   140

Met Tyr Thr Val Gly Tyr Ser Ser Ser Leu Val Met Leu Leu Val Ala
145   150   155   160

Leu Gly Ile Leu Cys Ala Phe Arg Arg Leu His Cys Thr Arg Asn Tyr
                165   170   175

Ile His Met His Leu Phe Val Ser Phe Ile Leu Arg Ala Leu Ser Asn
            180   185   190

Phe Ile Lys Asp Ala Val Leu Phe Ser Ser Asp Asp Val Thr Tyr Cys
        195   200   205

Asp Ala His Arg Ala Gly Cys Lys Leu Val Met Val Leu Phe Gln Tyr
    210   215   220

Cys Ile Met Ala Asn Tyr Ser Trp Leu Leu Val Glu Gly Leu Tyr Leu
225   230   235   240

His Thr Leu Leu Ala Ile Ser Phe Phe Ser Glu Arg Lys Tyr Leu Gln
                245   250   255

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```
Gly Phe Val Ala Phe Gly Trp Gly Ser Pro Ala Ile Phe Val Ala Leu
              260                   265                   270

Trp Ala Ile Ala Arg His Phe Leu Glu Asp Val Gly Cys Trp Asp Ile
         275                   280                   285

Asn Ala Asn Ala Ser Ile Trp Trp Ile Ile Arg Gly Pro Val Ile Leu
      290                   295                   300

Ser Ile Leu Ile Asn Phe Ile Leu Phe Ile Asn Ile Leu Arg Ile Leu
305                   310                   315                   320

Met Arg Lys Leu Arg Thr Gln Glu Thr Arg Gly Asn Glu Val Ser His
              325                   330                   335

Tyr Lys Arg Leu Ala Arg Ser Thr Leu Leu Leu Ile Pro Leu Phe Gly
         340                   345                   350

Ile His Tyr Ile Val Phe Ala Phe Ser Pro Glu Asp Ala Met Glu Ile
      355                   360                   365

Gln Leu Phe Phe Glu Leu Ala Leu Ala Ser Phe Gln Gly Leu Val Val
   370                   375                   380

Ala Val Leu Tyr Cys Phe Leu Asn Gly Glu Val Gln Leu Glu Val Gln
385                   390                   395                   400

Lys Lys Trp Gln Gln Trp His Leu Arg Glu Phe Pro Leu His Pro Val
              405                   410                   415

Ala Ser Phe Ser Asn Ser Thr Lys Ala Ser His Leu Glu Gln Ser Gln
         420                   425                   430

Gly Thr Cys Arg Thr Ser Ile Ile
         435                   440


<210> 68
<211> 449
<212> PRT
<213> Rattus norvegicus

<400> 68
Met Leu Ser Thr Met Arg Pro Arg Leu Ser Leu Leu Leu Leu Arg Leu
   1                5                   10                   15

Leu Leu Leu Thr Lys Ala Ala His Thr Val Gly Val Pro Pro Arg Leu
              20                   25                   30
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Cys Asp Val Arg Arg Val Leu Leu Glu Glu Arg Ala His Cys Leu Gln
         35                  40                  45

Gln Leu Ser Lys Glu Lys Lys Gly Ala Leu Gly Pro Glu Thr Ala Ser
      50                  55                  60

Gly Cys Glu Gly Leu Trp Asp Asn Met Ser Cys Trp Pro Ser Ser Ala
 65                  70                  75                  80

Pro Ala Arg Thr Val Glu Val Gln Cys Pro Lys Phe Leu Leu Met Leu
              85                  90                  95

Ser Asn Lys Asn Gly Ser Leu Phe Arg Asn Cys Thr Gln Asp Gly Trp
          100                 105                 110

Ser Glu Thr Phe Pro Arg Pro Asp Leu Ala Cys Gly Val Asn Ile Asn
      115                 120                 125

Asn Ser Phe Asn Glu Arg Arg His Ala Tyr Leu Leu Lys Leu Lys Val
      130                 135                 140

Met Tyr Thr Val Gly Tyr Ser Ser Ser Leu Ala Met Leu Leu Val Ala
145                 150                 155                 160

Leu Ser Ile Leu Cys Ser Phe Arg Arg Leu His Cys Thr Arg Asn Tyr
          165                 170                 175

Ile His Met His Leu Phe Val Ser Phe Ile Leu Arg Ala Leu Ser Asn
          180                 185                 190

Phe Ile Lys Asp Ala Val Leu Phe Ser Ser Asp Asp Val Thr Tyr Cys
      195                 200                 205

Asp Ala His Lys Val Gly Cys Lys Leu Val Met Ile Phe Phe Gln Tyr
      210                 215                 220

Cys Ile Met Ala Asn Tyr Ala Trp Leu Leu Val Glu Gly Leu Tyr Leu
225                 230                 235                 240

His Thr Leu Leu Ala Ile Ser Phe Phe Ser Glu Arg Lys Tyr Leu Gln
          245                 250                 255

Ala Phe Val Leu Leu Gly Trp Gly Ser Pro Ala Ile Phe Val Ala Leu
          260                 265                 270

Trp Ala Ile Thr Arg His Phe Leu Glu Asn Thr Gly Cys Trp Asp Ile
      275                 280                 285
```

111

Asn Ala Asn Ala Ser Val Trp Trp Val Ile Arg Gly Pro Val Ile Leu
290   295   300

Ser Ile Leu Ile Asn Phe Ile Phe Phe Ile Asn Ile Leu Arg Ile Leu
305   310   315   320

Met Arg Lys Leu Arg Thr Gln Glu Thr Arg Gly Ser Glu Thr Asn His
                325   330   335

Tyr Lys Arg Leu Ala Lys Ser Thr Leu Leu Leu Ile Pro Leu Phe Gly
            340   345   350

Ile His Tyr Ile Val Phe Ala Phe Ser Pro Glu Asp Ala Met Glu Val
        355   360   365

Gln Leu Phe Phe Glu Leu Ala Leu Gly Ser Phe Gln Gly Leu Val Val
    370   375   380

Ala Val Leu Tyr Cys Phe Leu Asn Gly Glu Val Gln Leu Glu Val Gln
385   390   395   400

Lys Lys Trp Arg Gln Trp His Leu Gln Glu Phe Pro Leu Arg Pro Val
                405   410   415

Ala Phe Asn Asn Ser Phe Ser Asn Ala Thr Asn Gly Pro Thr His Ser
            420   425   430

Thr Lys Ala Ser Thr Glu Gln Ser Arg Ser Ile Pro Arg Ala Ser Ile
        435   440   445

Ile

<210> 69
<211> 249
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:7tm_2,7
      transmembrane receptor domain sequence

<400> 69
Ala Leu Leu Leu Ser Val Ile Tyr Thr Val Gly Tyr Ser Leu Ser Leu
  1   5   10   15

112

Val Cys Leu Leu Leu Ala Ile Ala Ile Phe Leu Phe Phe Arg Lys Leu
                20   25   30

Arg Cys Thr Arg Asn Tyr Ile His Leu Asn Leu Phe Leu Ser Leu Ile
            35   40   45

Leu Arg Ala Leu Ser Phe Leu Ile Gly Asp Ala Val Leu Leu Asn Ser
        50   55   60

Gly Gly Leu Gly Cys Lys Val Val Ala Val Phe Leu His Tyr Phe Phe
    65   70   75   80

Leu Ala Asn Phe Phe Trp Met Leu Val Glu Gly Leu Tyr Leu Tyr Thr
                    85   90   95

Leu Leu Val Glu Thr Phe Phe Ser Glu Arg Leu Arg Leu Leu Trp Tyr
                100   105   110

Leu Leu Ile Gly Trp Gly Val Pro Ala Val Val Val Gly Ile Trp Ala
        115   120   125

Leu Val Arg Pro Lys Gly Tyr Gly Asn Glu Gly Cys Cys Trp Leu Ser
    130   135   140

Asn Glu Gly Gly Phe Trp Trp Ile Phe Lys Gly Pro Val Leu Leu Ile
145   150   155   160

Ile Leu Val Asn Phe Ile Phe Phe Ile Asn Ile Leu Arg Val Leu Val
                165   170   175

Gln Lys Leu Arg Ser Pro Gln Thr Gly Lys Thr Asp Leu Tyr Arg Lys
            180   185   190

Leu Val Lys Ser Thr Leu Val Leu Leu Pro Leu Leu Gly Val Thr Trp
        195   200   205

Ile Leu Phe Leu Phe Ala Pro Glu Ser Gln Ser Ser Leu Val Phe Leu
    210   215   220

Tyr Leu Phe Leu Ile Leu Asn Ser Phe Gln Gly Phe Phe Val Ala Val
225   230   235   240

Leu Tyr Cys Phe Leu Asn Gly Glu Val
            245

<210> 70
<211> 249

113

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:HRM, Hormone
     receptor domain sequence

<400> 70
Ala Leu Leu Leu Ser Val Ile Tyr Thr Val Gly Tyr Ser Leu Ser Leu
 1   5   10   15

Val Cys Leu Leu Leu Ala Ile Ala Ile Phe Leu Phe Phe Arg Lys Leu
                20   25   30

Arg Cys Thr Arg Asn Tyr Ile His Leu Asn Leu Phe Leu Ser Leu Ile
         35   40   45

Leu Arg Ala Leu Ser Phe Leu Ile Gly Asp Ala Val Leu Leu Asn Ser
     50   55   60

Gly Gly Leu Gly Cys Lys Val Val Ala Val Phe Leu His Tyr Phe Phe
 65   70   75   80

Leu Ala Asn Phe Phe Trp Met Leu Val Glu Gly Leu Tyr Leu Tyr Thr
                 85   90   95

Leu Leu Val Glu Thr Phe Phe Ser Glu Arg Leu Arg Leu Leu Trp Tyr
             100   105   110

Leu Leu Ile Gly Trp Gly Val Pro Ala Val Val Val Gly Ile Trp Ala
             115   120   125

Leu Val Arg Pro Lys Gly Tyr Gly Asn Glu Gly Cys Cys Trp Leu Ser
     130   135   140

Asn Glu Gly Gly Phe Trp Trp Ile Phe Lys Gly Pro Val Leu Leu Ile
145   150   155   160

Ile Leu Val Asn Phe Ile Phe Phe Ile Asn Ile Leu Arg Val Leu Val
                 165   170   175

Gln Lys Leu Arg Ser Pro Gln Thr Gly Lys Thr Asp Leu Tyr Arg Lys
             180   185   190

Leu Val Lys Ser Thr Leu Val Leu Leu Pro Leu Leu Gly Val Thr Trp
             195   200   205

Ile Leu Phe Leu Phe Ala Pro Glu Ser Gln Ser Ser Leu Val Phe Leu

                              114

220
                    215
   210
Tyr Leu Phe Leu Ile Leu Asn Ser Phe Gln Gly Phe Phe Val Ala Val
225   230   235   240

Leu Tyr Cys Phe Leu Asn Gly Glu Val
                245

<210> 71
<211> 67
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:HormR, Domain
      present in hormone receptors sequence

<400> 71
Gly Cys Pro Ala Thr Trp Asp Gly Ile Ile Cys Trp Pro Gln Thr Pro
 1   5   10   15

Ala Gly Gln Leu Val Glu Val Pro Cys Pro Asp Tyr Phe Ser Gly Phe
                20   25   30

Ser Asn Lys Thr Gly Ala Ser Arg Asn Cys Thr Glu Asn Gly Gly Trp
          35   40   45

Ser Pro Pro Phe Pro Asn Tyr Ser Asn Cys Thr Ser Asn Asp Tyr Asn
     50   55   60

Glu Leu Lys
 65

<210> 72
<211> 558
<212> PRT
<213> Homo sapiens

<400> 72
Ala Val Arg Ala Asp Leu Pro Arg Pro Glu Val Ala Pro Leu Arg Gly
 1   5   10   15

Leu Pro Arg Pro Lys Phe Ser Ala Pro Arg Gly Leu Arg Ala Pro Arg
                20   25   30

Ser Pro Arg Pro Glu Val Ser Ala Arg Thr Met Arg Leu Gly Ser Pro

35   40   45

Gly Leu Leu Phe Leu Leu Phe Ser Ser Leu Arg Ala Asp Thr Gln Glu
   50   55   60

Lys Glu Val Arg Ala Met Val Gly Ser Asp Val Glu Leu Ser Cys Ala
 65   70   75   80

Cys Pro Glu Gly Ser Arg Phe Asp Leu Asn Asp Val Tyr Val Tyr Trp
                 85   90   95

Gln Thr Ser Glu Ser Lys Thr Val Val Thr Tyr His Ile Pro Gln Asn
              100   105   110

Ser Ser Leu Glu Asn Val Asp Ser Arg Tyr Arg Asn Arg Ala Leu Met
       115   120   125

Ser Pro Ala Gly Met Leu Arg Gly Asp Phe Ser Leu Arg Leu Phe Asn
   130   135   140

Val Thr Pro Gln Asp Glu Gln Lys Phe His Cys Leu Val Leu Ser Gln
 145   150   155   160

Ser Leu Gly Phe Gln Glu Val Leu Ser Val Glu Val Thr Leu His Val
              165   170   175

Ala Ala Asn Phe Ser Val Pro Val Val Ser Ala Pro His Ser Pro Ser
              180   185   190

Gln Asp Glu Leu Thr Phe Thr Cys Thr Ser Ile Asn Gly Tyr Pro Arg
       195   200   205

Pro Asn Val Tyr Trp Ile Asn Lys Thr Asp Asn Ser Leu Leu Asp Gln
   210   215   220

Ala Leu Gln Asn Asp Thr Val Phe Leu Asn Met Arg Gly Leu Tyr Asp
 225   230   235   240

Val Val Ser Val Leu Arg Ile Ala Arg Thr Pro Ser Val Asn Ile Gly
              245   250   255

Cys Cys Ile Glu Asn Val Leu Leu Gln Gln Asn Leu Thr Val Gly Ser
              260   265   270

Gln Thr Gly Asn Asp Ile Gly Glu Arg Asp Lys Ile Thr Glu Asn Pro
       275   280   285

Val Ser Thr Gly Glu Lys Asn Ala Ala Thr Trp Ser Ile Leu Ala Val
                             116

300
     290   295
Leu Cys Leu Leu Val Val Val Ala Val Ala Ile Gly Trp Val Cys Arg
305   310   315   320
Asp Arg Cys Leu Gln His Ser Tyr Ala Gly Ala Trp Ala Val Ser Pro
                    325   330   335
Glu Thr Glu Leu Thr Gly Glu Phe Ala Val Gly Ser Ser Arg Phe Trp
              340   345   350
Gly Ala Gln Gly Arg Leu Gly Cys Gln Leu Ser Phe Arg Val Ser Lys
         355   360   365
Asn Phe Gln Lys Ala Lys Val Pro Cys Leu Glu Gln Leu Leu Phe Leu
     370   375   380
Glu Thr Gln Arg Ser Pro Arg Trp Cys Ala Arg His Phe Leu Gln Pro
              390   395   400
385
Pro Leu Gly Met Gly Trp His Pro Gly Val His Phe Val Thr Leu Arg
                 405   410   415
Trp Asp Phe Pro Asn Met His Arg Ser Arg Glu Thr Ser Ala Arg Pro
              420   425   430
Pro Arg Ser Pro Val Pro Ser Pro Asp Gln Gly Val Gln Gly Gly Ser
         435   440   445
Arg His Arg Arg Pro Ala Pro Met Gly Cys Pro Glu Trp Val Gln Ala
     450   455   460
Pro Ala Pro Ser Pro Arg Gly Val Ser Arg Ala Gly Pro Gly Thr Gly
              470   475   480
465
Ala Gln Pro Pro Trp Gly Val Gln Gly Gly Ser Arg His Arg Arg Pro
              485   490   495
Ala Pro Met Gly Cys Pro Glu Trp Val Gln Ala Pro Ala Pro Ser Pro
         500   505   510
Arg Gly Val Ser Arg Ala Gly Pro Gly Thr Gly Ala Gln Pro Leu Trp
         515   520   525
Gly Val Trp Ser Gly Ser Gly His Arg Gln Leu Leu Ser Val Ala Ala
     530   535   540
Thr Pro Ala Ala Leu Val Cys Pro Ser Val Pro Gly Ala Thr
                                117

<210> 73
<211> 302
<212> PRT
<213> Homo sapiens

<400> 73
Met Arg Leu Gly Ser Pro Gly Leu Leu Phe Leu Leu Phe Ser Ser Leu
  1   5   10   15

Arg Ala Asp Thr Gln Glu Lys Glu Val Arg Ala Met Val Gly Ser Asp
            20   25   30

Val Glu Leu Ser Cys Ala Cys Pro Glu Gly Ser Arg Phe Asp Leu Asn
        35   40   45

Asp Val Tyr Val Tyr Trp Gln Thr Ser Glu Ser Lys Thr Val Val Thr
    50   55   60

Tyr His Ile Pro Gln Asn Ser Ser Leu Glu Asn Val Asp Ser Arg Tyr
 65   70   75   80

Arg Asn Arg Ala Leu Met Ser Pro Ala Gly Met Leu Arg Gly Asp Phe
                85   90   95

Ser Leu Arg Leu Phe Asn Val Thr Pro Gln Asp Glu Gln Lys Phe His
            100   105   110

Cys Leu Val Leu Ser Gln Ser Leu Gly Phe Gln Glu Val Leu Ser Val
        115   120   125

Glu Val Thr Leu His Val Ala Ala Asn Phe Ser Val Pro Val Val Ser
    130   135   140

Ala Pro His Ser Pro Ser Gln Asp Glu Leu Thr Phe Thr Cys Thr Ser
145   150   155   160

Ile Asn Gly Tyr Pro Arg Pro Asn Val Tyr Trp Ile Asn Lys Thr Asp
                165   170   175

Asn Ser Leu Leu Asp Gln Ala Leu Gln Asn Asp Thr Val Phe Leu Asn
            180   185   190

Met Arg Gly Leu Tyr Asp Val Val Ser Val Leu Arg Ile Ala Arg Thr
        195   200   205

Pro Ser Val Asn Ile Gly Cys Cys Ile Glu Asn Val Leu Leu Gln Gln
    210   215   220

Asn Leu Thr Val Gly Ser Gln Thr Gly Asn Asp Ile Gly Glu Arg Asp
225   230   235   240

Lys Ile Thr Glu Asn Pro Val Ser Thr Gly Glu Lys Asn Ala Ala Thr
                245   250   255

Trp Ser Ile Leu Ala Val Leu Cys Leu Leu Val Val Val Ala Val Ala
                260   265   270

Ile Gly Trp Val Cys Arg Asp Arg Cys Leu Gln His Ser Tyr Ala Gly
        275   280   285

Ala Trp Ala Val Ser Pro Glu Thr Glu Leu Thr Gly His Val
    290   295   300

<210> 74
<211> 309
<212> PRT
<213> Homo sapiens

<400> 74
Met Arg Leu Gly Ser Pro Gly Leu Leu Phe Leu Leu Phe Ser Ser Leu
    1   5   10   15

Arg Ala Asp Thr Gln Glu Lys Glu Val Arg Ala Met Val Gly Ser Asp
                20   25   30

Val Glu Leu Ser Cys Ala Cys Pro Glu Gly Ser Arg Phe Asp Leu Asn
        35   40   45

Asp Val Tyr Val Tyr Trp Gln Thr Ser Glu Ser Lys Thr Val Val Thr
        50   55   60

Tyr His Ile Pro Gln Asn Ser Ser Leu Glu Asn Val Asp Ser Arg Tyr
    65   70   75   80

Arg Asn Arg Ala Leu Met Ser Pro Ala Gly Met Leu Arg Gly Asp Phe
                85   90   95

Ser Leu Arg Leu Phe Asn Val Thr Pro Gln Asp Glu Gln Lys Phe His
            100   105   110

Cys Leu Val Leu Ser Gln Ser Leu Gly Phe Gln Glu Val Leu Ser Val
        115   120   125

119

Glu Val Thr Leu His Val Ala Ala Asn Phe Ser Val Pro Val Val Ser
130   135   140

Ala Pro His Ser Pro Ser Gln Asp Glu Leu Thr Phe Thr Cys Thr Ser
145   150   155   160

Ile Asn Gly Tyr Pro Arg Pro Asn Val Tyr Trp Ile Asn Lys Thr Asp
                165   170   175

Asn Ser Leu Leu Asp Gln Ala Leu Gln Asn Asp Thr Val Phe Leu Asn
            180   185   190

Met Arg Gly Leu Tyr Asp Val Val Ser Val Leu Arg Ile Ala Arg Thr
        195   200   205

Pro Ser Val Asn Ile Gly Cys Cys Ile Glu Asn Val Leu Leu Gln Gln
    210   215   220

Asn Leu Thr Val Gly Ser Gln Thr Gly Asn Asp Ile Gly Glu Arg Asp
225   230   235   240

Lys Ile Thr Glu Asn Pro Val Ser Thr Gly Glu Lys Asn Ala Ala Thr
                245   250   255

Trp Ser Ile Leu Ala Val Leu Cys Leu Leu Val Val Val Ala Val Ala
            260   265   270

Ile Gly Trp Val Cys Arg Asp Arg Cys Leu Gln His Ser Tyr Ala Gly
        275   280   285

Ala Trp Ala Val Ser Pro Glu Thr Glu Leu Thr Glu Ser Trp Asn Leu
    290   295   300

Leu Leu Leu Leu Ser
305

<210> 75
<211> 347
<212> PRT
<213> Mus musculus

<400> 75
Met Gln Leu Lys Cys Pro Cys Phe Val Ser Leu Gly Thr Arg Gln Pro
1   5   10   15

Val Trp Lys Lys Leu His Val Ser Ser Gly Phe Phe Ser Gly Leu Gly

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                                20                          25                              30
Leu Phe Leu Leu Leu Leu Ser Ser Leu Cys Ala Ala Ser Ala Glu Thr
            35                          40                          45
Glu Val Gly Ala Met Val Gly Ser Asn Val Val Leu Ser Cys Ile Asp
    50                          55                          60
Pro His Arg Arg His Phe Asn Leu Ser Gly Leu Tyr Val Tyr Trp Gln
  65                          70                          75                          80
Ile Glu Asn Pro Glu Val Ser Val Thr Tyr Tyr Leu Pro Tyr Lys Ser
                85                          90                          95
Pro Gly Ile Asn Val Asp Ser Ser Tyr Lys Asn Arg Gly His Leu Ser
            100                         105                         110
Leu Asp Ser Met Lys Gln Gly Asn Phe Ser Leu Tyr Leu Lys Asn Val
        115                         120                         125
Thr Pro Gln Asp Thr Gln Glu Phe Thr Cys Arg Val Phe Met Asn Thr
    130                         135                         140
Ala Thr Glu Leu Val Lys Ile Leu Glu Glu Val Val Arg Leu Arg Val
  145                         150                         155                         160
Ala Ala Asn Phe Ser Thr Pro Val Ile Ser Thr Ser Asp Ser Ser Asn
                165                         170                         175
Pro Gly Gln Glu Arg Thr Tyr Thr Cys Met Ser Lys Asn Gly Tyr Pro
            180                         185                         190
Glu Pro Asn Leu Tyr Trp Ile Asn Thr Thr Asp Asn Ser Leu Ile Asp
        195                         200                         205
Thr Ala Leu Gln Asn Asn Thr Val Tyr Leu Asn Lys Leu Gly Leu Tyr
    210                         215                         220
Asp Val Ile Ser Thr Leu Arg Leu Pro Trp Thr Ser His Gly Asp Val
  225                         230                         235                         240
Leu Cys Cys Val Glu Asn Val Ala Leu His Gln Asn Ile Thr Ser Ile
                245                         250                         255
Ser Gln Ala Glu Ser Phe Thr Gly Asn Asn Thr Lys Asn Pro Gln Glu
            260                         265                         270
Thr His Asn Asn Glu Leu Lys Val Leu Val Pro Val Leu Ala Val Leu
                                    121
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                                                    285
                              280
          275
Ala Ala Ala Ala Phe Val Ser Phe Ile Ile Tyr Arg Arg Thr Arg Pro
   290                          295                 300

His Arg Ser Tyr Thr Gly Pro Lys Thr Val Gln Leu Glu Leu Thr Asp
305                 310                 315                 320

Thr Trp Ala Pro Val Pro Tyr Gln Asp Tyr Leu Ile Pro Arg Tyr Leu
                325                 330                 335

Met Ser Pro Cys Leu Lys Thr Arg Gly Leu Pro
            340                 345


<210> 76
<211> 322
<212> PRT
<213> Mus musculus

<400> 76
Met Gln Leu Lys Cys Pro Cys Phe Val Ser Leu Gly Thr Arg Gln Pro
1               5                   10                      15

Val Trp Lys Lys Leu His Val Ser Ser Gly Phe Phe Ser Gly Leu Gly
            20                  25                  30

Leu Phe Leu Leu Leu Leu Ser Ser Leu Cys Ala Ala Ser Ala Glu Thr
        35                  40                  45

Glu Val Gly Ala Met Val Gly Ser Asn Val Val Leu Ser Cys Ile Asp
    50                  55                  60

Pro His Arg Arg His Phe Asn Leu Ser Gly Leu Tyr Val Tyr Trp Gln
65                  70                  75                  80

Ile Glu Asn Pro Glu Val Ser Val Thr Tyr Tyr Leu Pro Tyr Lys Ser
                85                  90                  95

Pro Gly Ile Asn Val Asp Ser Ser Tyr Lys Asn Arg Gly His Leu Ser
            100                 105                 110

Leu Asp Ser Met Lys Gln Gly Asn Phe Ser Leu Tyr Leu Lys Asn Val
        115                 120                 125

Thr Pro Gln Asp Thr Gln Glu Phe Thr Cys Arg Val Phe Met Asn Thr
        130                 135                 140
```

```
Ala Thr Glu Leu Val Lys Ile Leu Glu Glu Val Val Arg Leu Arg Val
145                 150                 155                 160

Ala Ala Asn Phe Ser Thr Pro Val Ile Ser Thr Ser Asp Ser Ser Asn
                165                 170                 175

Pro Gly Gln Glu Arg Thr Tyr Thr Cys Met Ser Lys Asn Gly Tyr Pro
            180                 185                 190

Glu Pro Asn Leu Tyr Trp Ile Asn Thr Thr Asp Asn Ser Leu Ile Asp
        195                 200                 205

Thr Ala Leu Gln Asn Asn Thr Val Tyr Leu Asn Lys Leu Gly Leu Tyr
    210                 215                 220

Asp Val Ile Ser Thr Leu Arg Leu Pro Trp Thr Ser Arg Gly Asp Val
225                 230                 235                 240

Leu Cys Cys Val Glu Asn Val Ala Leu His Gln Asn Ile Thr Ser Ile
                245                 250                 255

Ser Gln Ala Glu Ser Phe Thr Gly Asn Asn Thr Lys Asn Pro Gln Glu
            260                 265                 270

Thr His Asn Asn Glu Leu Lys Val Leu Val Pro Val Leu Ala Val Leu
        275                 280                 285

Ala Ala Ala Ala Phe Val Ser Phe Ile Ile Tyr Arg Arg Thr Arg Pro
    290                 295                 300

His Arg Ser Tyr Thr Gly Pro Lys Thr Val Gln Leu Glu Leu Thr Asp
305                 310                 315                 320

His Ala


<210> 77
<211> 80
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:IGv,
      Immunoglobulin domain sequence


<400> 77
Ser Val Thr Leu Ser Cys Lys Ala Ser Gly Phe Thr Phe Ser Ser Tyr
```

123

```
                                          10                    15
   1                 5
Tyr Val Ser Trp Val Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Leu
              20                      25                  30

Gly Tyr Ile Gly Ser Asp Val Ser Tyr Ser Glu Ala Ser Tyr Lys Gly
         35                      40                  45

Arg Val Thr Ile Ser Lys Asp Asn Ser Lys Asn Asp Val Ser Leu Thr
    50                      55                  60

Ile Ser Asn Leu Arg Val Glu Asp Thr Gly Thr Tyr Tyr Cys Ala Val
  65                      70                  75                  80
```

```
Met Arg Ile Phe Ala Val Phe Ile Phe Met Thr Tyr Trp His Leu Leu
   1                 5                      10                  15

Asn Ala Phe Thr Val Thr Val Pro Lys Asp Leu Tyr Val Val Glu Tyr
              20                      25                  30

Gly Ser Asn Met Thr Ile Glu Cys Lys Phe Pro Val Glu Lys Gln Leu
         35                      40                  45

Asp Leu Ala Ala Leu Ile Val Tyr Trp Glu Met Glu Asp Lys Asn Ile
    50                      55                  60

Ile Gln Phe Val His Gly Glu Glu Asp Leu Lys Val Gln His Ser Ser
  65                      70                  75                  80

Tyr Arg Gln Arg Ala Arg Leu Leu Lys Asp Gln Leu Ser Leu Gly Asn
              85                      90                  95

Ala Ala Leu Gln Ile Thr Asp Val Lys Leu Gln Asp Ala Gly Val Tyr
             100                     105                 110

Arg Cys Met Ile Ser Tyr Gly Gly Ala Asp Tyr Lys Arg Ile Thr Val
         115                     120                 125
```

Lys Val Asn Ala Pro Tyr Asn Lys Ile Asn Gln Arg Ile Leu Val Val
        130   135   140

Asp Pro Val Thr Ser Glu His Glu Leu Thr Cys Gln Ala Glu Gly Tyr
145   150   155   160

Pro Lys Ala Glu Val Ile Trp Thr Ser Ser Asp His Gln Val Leu Ser
                165   170   175

Gly Lys Thr Thr Thr Thr Asn Ser Lys Arg Glu Glu Lys Leu Phe Asn
            180   185   190

Val Thr Ser Thr Leu Arg Ile Asn Thr Thr Thr Asn Glu Ile Phe Tyr
        195   200   205

Cys Thr Phe Arg Arg Leu Asp Pro Glu Glu Asn His Thr Ala Glu Leu
    210   215   220

Val Ile Pro Glu Leu Pro Leu Ala His Pro Pro Asn Glu Arg Thr His
225   230   235   240

Leu Val Ile Leu Gly Ala Ile Arg Val Asn Ala Thr Ala Asn Asp Val
                245   250   255

Phe Tyr Cys Thr Phe Trp Arg Ser Gln Pro Gly Gln Asn His Thr Ala
            260   265   270

Glu Leu Ile Ile Pro Glu Leu Pro Ala Thr His Pro Pro Gln Asn Arg
        275   280   285

Thr His Trp Val Leu Leu Gly Ser Ile Leu Leu Cys Leu Gly Val Ala
    290   295   300

Leu Thr Phe Ile Phe Arg Leu Arg Lys Gly Arg Met Met Asp Val Lys
305   310   315   320

Lys Cys Gly Ile Gln Asp Thr Asn Ser Lys Lys Gln Ser Asp Thr His
                325   330   335

Leu Glu Glu Thr
            340

<210> 79
<211> 290
<212> PRT
<213> Mus musculus

125

<400> 79

Met Arg Ile Phe Ala Gly Ile Ile Phe Thr Ala Cys Cys His Leu Leu
 1   5   10   15

Arg Ala Phe Thr Ile Thr Ala Pro Lys Asp Leu Tyr Val Val Glu Tyr
            20   25   30

Gly Ser Asn Val Thr Met Glu Cys Arg Phe Pro Val Glu Arg Glu Leu
         35   40   45

Asp Leu Leu Ala Leu Val Val Tyr Trp Glu Lys Glu Asp Glu Gln Val
      50   55   60

Ile Gln Phe Val Ala Gly Glu Glu Asp Leu Lys Pro Gln His Ser Asn
65   70   75   80

Phe Arg Gly Arg Ala Ser Leu Pro Lys Asp Gln Leu Leu Lys Gly Asn
               85   90   95

Ala Ala Leu Gln Ile Thr Asp Val Lys Leu Gln Asp Ala Gly Val Tyr
            100   105   110

Cys Cys Ile Ile Ser Tyr Gly Gly Ala Asp Tyr Lys Arg Ile Thr Leu
            115   120   125

Lys Val Asn Ala Pro Tyr Arg Lys Ile Asn Gln Arg Ile Ser Val Asp
      130   135   140

Pro Ala Thr Ser Glu His Glu Leu Ile Cys Gln Ala Glu Gly Tyr Pro
145   150   155   160

Glu Ala Glu Val Ile Trp Thr Asn Ser Asp His Gln Pro Val Ser Gly
            165   170   175

Lys Arg Ser Val Thr Thr Ser Arg Thr Glu Gly Met Leu Leu Asn Val
            180   185   190

Thr Ser Ser Leu Arg Val Asn Ala Thr Ala Asn Asp Val Phe Tyr Cys
            195   200   205

Thr Phe Trp Arg Ser Gln Pro Gly Gln Asn His Thr Ala Glu Leu Ile
      210   215   220

Ile Pro Glu Leu Pro Ala Thr His Pro Pro Gln Asn Arg Thr His Trp
225   230   235   240

Val Leu Leu Gly Ser Ile Leu Leu Phe Leu Ile Val Val Ser Thr Val
            245   250   255

                              126

Leu Leu Phe Leu Arg Lys Gln Val Arg Met Leu Asp Val Glu Lys Cys
            260   265   270

Gly Val Glu Asp Thr Ser Ser Lys Asn Arg Asn Asp Thr Gln Phe Glu
        275   280   285

Glu Thr
    290

<210> 80
<211> 176
<212> PRT
<213> Homo sapiens

<400> 80
Met Ile Ser Tyr Gly Gly Ala Asp Tyr Lys Arg Ile Thr Val Lys Val
  1   5   10   15

Asn Ala Pro Tyr Asn Lys Ile Asn Gln Arg Ile Leu Val Val Asp Pro
            20   25   30

Val Thr Ser Glu His Glu Leu Thr Cys Gln Ala Glu Gly Tyr Pro Lys
        35   40   45

Ala Glu Val Ile Trp Thr Ser Ser Asp His Gln Val Leu Ser Gly Lys
      50   55   60

Thr Thr Thr Thr Asn Ser Lys Arg Glu Glu Lys Leu Phe Asn Val Thr
  65   70   75   80

Ser Thr Leu Arg Ile Asn Thr Thr Thr Asn Glu Ile Phe Tyr Cys Thr
                85   90   95

Phe Arg Arg Leu Asp Pro Glu Glu Asn His Thr Ala Glu Leu Val Ile
            100   105   110

Pro Glu Leu Pro Leu Ala His Pro Pro Asn Glu Arg Thr His Leu Val
        115   120   125

Ile Leu Gly Ala Ile Leu Leu Cys Leu Gly Val Ala Leu Thr Phe Ile
      130   135   140

Phe Arg Leu Arg Lys Gly Arg Met Met Asp Val Lys Lys Cys Gly Ile
145   150   155   160

Gln Asp Thr Asn Ser Lys Lys Gln Ser Asp Thr His Leu Glu Glu Thr

                                127

165   170   175

Met Ile Phe Leu Leu Leu Met Leu Ser Leu Glu Leu Gln Leu His Gln
 1   5   10   15

Ile Ala Ala Leu Phe Thr Val Thr Val Pro Lys Glu Leu Tyr Ile Ile
               20   25   30

Glu His Gly Ser Asn Val Thr Leu Glu Cys Asn Phe Asp Thr Gly Ser
           35   40   45

His Val Asn Leu Gly Ala Ile Thr Ala Ser Leu Gln Lys Val Glu Asn
       50   55   60

Asp Thr Ser Pro His Arg Glu Arg Ala Thr Leu Leu Glu Glu Gln Leu
 65   70   75   80

Pro Leu Gly Lys Ala Ser Phe His Ile Pro Gln Val Gln Val Arg Asp
               85   90   95

Glu Gly Gln Tyr Gln Cys Ile Ile Ile Tyr Gly Val Ala Trp Asp Tyr
               100   105   110

Lys Tyr Leu Thr Leu Lys Val Lys Ala Ser Tyr Arg Lys Ile Asn Thr
           115   120   125

His Ile Leu Lys Val Pro Glu Thr Asp Glu Val Glu Leu Thr Cys Gln
       130   135   140

Ala Thr Gly Tyr Pro Leu Ala Glu Val Ser Trp Pro Asn Val Ser Val
145   150   155   160

Pro Ala Asn Thr Ser His Ser Arg Thr Pro Glu Gly Leu Tyr Gln Val
               165   170   175

Thr Ser Val Leu Arg Leu Lys Pro Pro Pro Gly Arg Asn Phe Ser Cys
               180   185   190

                              128

Val Phe Trp Asn Thr His Val Arg Glu Leu Thr Leu Ala Ser Ile Asp
195   200   205

Leu Gln Ser Gln Met Glu Pro Arg Thr His Pro Thr Trp Leu Leu His
    210   215   220

Ile Phe Ile Pro Ser Cys Ile Ile Ala Phe Ile Phe Ile Ala Thr Val
225   230   235   240

Ile Ala Leu Arg Lys Gln Leu Cys Gln Lys Leu Tyr Ser Ser Lys Asp
                    245   250   255

Thr Thr Lys Arg Pro Val Thr Thr Thr Lys Arg Glu Val Asn Ser Ala
                260   265   270

Ile

<210> 82
<211> 247
<212> PRT
<213> Mus musculus

<400> 82
Met Leu Leu Leu Leu Pro Ile Leu Asn Leu Ser Leu Gln Leu His Pro
  1   5   10   15

Val Ala Ala Leu Phe Thr Val Thr Ala Pro Lys Glu Val Tyr Thr Val
                20   25   30

Asp Val Gly Ser Ser Val Ser Leu Glu Cys Asp Phe Asp Arg Arg Glu
            35   40   45

Cys Thr Glu Leu Glu Gly Ile Arg Ala Ser Leu Gln Lys Val Glu Asn
        50   55   60

Asp Thr Ser Leu Gln Ser Glu Arg Ala Thr Leu Leu Glu Glu Gln Leu
65   70   75   80

Pro Leu Gly Lys Ala Leu Phe His Ile Pro Ser Val Gln Val Arg Asp
                85   90   95

Ser Gly Gln Tyr Arg Cys Leu Val Ile Cys Gly Ala Ala Trp Asp Tyr
                100   105   110

Lys Tyr Leu Thr Val Lys Val Lys Ala Ser Tyr Met Arg Ile Asp Thr
        115   120   125

129

```
Arg Ile Leu Glu Val Pro Gly Thr Gly Glu Val Gln Leu Thr Cys Gln
    130                     135                 140

Ala Arg Gly Tyr Pro Leu Ala Glu Val Ser Trp Gln Asn Val Ser Val
145                     150                 155                 160

Pro Ala Asn Thr Ser His Ile Arg Thr Pro Glu Gly Leu Tyr Gln Val
                165                 170                 175

Thr Ser Val Leu Arg Leu Lys Pro Gln Pro Ser Arg Asn Phe Ser Cys
            180                 185                 190

Met Phe Trp Asn Ala His Met Lys Glu Leu Thr Ser Ala Ile Ile Asp
        195                 200                 205

Pro Leu Ser Arg Met Glu Pro Lys Val Pro Arg Thr Trp Pro Leu His
    210                 215                 220

Val Phe Ile Pro Ala Cys Thr Ile Ala Leu Ile Phe Leu Ala Ile Val
225                     230                 235                 240

Ile Ile Gln Arg Lys Arg Ile
                245
```

<210> 83
<211> 85
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:IG,
      Immunoglobulin domain sequence

<400> 83
```
Pro Pro Ser Val Thr Val Lys Glu Gly Glu Ser Val Thr Leu Ser Cys
  1                 5                   10                  15

Glu Ala Ser Gly Asn Pro Pro Pro Thr Val Thr Trp Tyr Lys Gln Gly
                20                  25                  30

Gly Lys Leu Leu Ala Glu Ser Gly Arg Phe Ser Val Ser Arg Ser Gly
        35                  40                  45

Gly Asn Ser Thr Leu Thr Ile Ser Asn Val Thr Pro Glu Asp Ser Gly
    50                  55                  60
```

Thr Tyr Thr Cys Ala Ala Thr Asn Ser Ser Gly Ser Ala Ser Ser Gly
65   70   75   80

Thr Thr Leu Thr Val
                  85

<210> 84
<211> 78
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: IGv,
      Immunoglobulin V-Type domain sequence

<400> 84
Ser Val Thr Leu Ser Cys Lys Ala Ser Gly Phe Thr Phe Ser Ser Tyr
1   5   10   15

Tyr Val Ser Trp Val Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Leu
              20   25   30

Gly Tyr Ile Gly Ser Asp Val Ser Tyr Ser Glu Ala Ser Tyr Lys Gly
          35   40   45

Arg Val Thr Ile Ser Lys Asp Asn Ser Lys Asn Asp Val Ser Leu Thr
      50   55   60

Ile Ser Asn Leu Arg Val Glu Asp Thr Gly Thr Tyr Tyr Cys
65   70   75

<210> 85
<211> 317
<212> PRT
<213> Xenopus laevis

<400> 85
Met Gly Lys Trp Leu Leu Tyr Val Thr Thr Leu Leu Leu Phe Val Ser
1   5   10   15

Pro His Pro Ser Leu Ser Asn Ile Thr Thr Ala Ala Pro Pro Leu Cys
              20   25   30

Gly Ser Pro Val Phe Ser Ser Arg Ile Val Gly Gly Thr Asp Thr Arg
          35   40   45

131

Gln Gly Ala Trp Pro Trp Gln Val Ser Leu Glu Phe Asn Gly Ser His
    50   55   60

Ile Cys Gly Gly Ser Ile Ile Ser Asp Gln Trp Ile Leu Thr Ala Thr
 65   70   75   80

His Cys Ile Glu His Pro Asp Leu Pro Ser Gly Cys Gly Val Arg Leu
                    85   90   95

Gly Ala Tyr Gln Leu Tyr Val Lys Asn Pro His Glu Met Thr Val Lys
            100   105   110

Val Asp Ile Ile Tyr Ile Asn Ser Glu Phe Asn Gly Pro Gly Thr Ser
        115   120   125

Gly Asp Ile Ala Leu Leu Lys Leu Ser Ser Pro Ile Lys Phe Thr Glu
    130   135   140

Tyr Ile Leu Pro Ile Cys Leu Pro Ala Ser Pro Val Thr Phe Ser Ser
145   150   155   160

Gly Thr Glu Cys Trp Ile Thr Gly Trp Gly Gln Thr Gly Ser Glu Val
                165   170   175

Pro Leu Gln Tyr Pro Ala Thr Leu Gln Lys Val Met Val Pro Ile Ile
            180   185   190

Asn Arg Asp Ser Cys Glu Lys Met Tyr His Ile Asn Ser Val Ile Ser
        195   200   205

Glu Thr Glu Ile Leu Ile Gln Ser Asp Gln Ile Cys Ala Gly Tyr Gln
    210   215   220

Ala Gly Gln Lys Asp Gly Cys Gln Gly Asp Ser Gly Gly Pro Leu Val
225   230   235   240

Cys Lys Ile Gln Gly Phe Trp Tyr Gln Ala Gly Ile Val Ser Trp Gly
                245   250   255

Glu Arg Cys Ala Ala Lys Asn Arg Pro Gly Val Tyr Thr Phe Val Pro
            260   265   270

Ala Tyr Glu Thr Trp Ile Ser Glu Arg Ser Val Ile Ser Phe Lys Pro
    275   280   285

Phe Thr Ser Ser Ser Ser Pro Ser Ser Ser Ser Val Leu Arg Ala Ser
    290   295   300

Ala Ile Leu Leu Gly Val Ser Leu Leu Leu His Asp Trp
305   310   315

<210> 86
<211> 342
<212> PRT
<213> Rattus norvegicus

<400> 86
Met Ala Leu Arg Val Gly Leu Gly Leu Gly Gln Leu Glu Ala Leu Phe
1   5   10   15

Val Leu Leu Leu Ile Gly Leu Leu Gln Ser Arg Ile Gly Ala Asp Gly
            20   25   30

Thr Glu Ala Ser Cys Gly Ala Val Ile Gln Pro Arg Ile Thr Gly Gly
        35   40   45

Gly Ser Ala Lys Pro Gly Gln Trp Pro Trp Gln Val Ser Ile Thr Tyr
    50   55   60

Asn Gly Val His Val Cys Gly Gly Ser Leu Val Ser Asn Gln Trp Val
65   70   75   80

Val Ser Ala Ala His Cys Phe Pro Arg Glu His Ser Lys Glu Glu Tyr
                85   90   95

Glu Val Lys Leu Gly Ala His Gln Leu Asp Ser Phe Ser Asn Asp Ile
            100   105   110

Val Val His Thr Val Ala Gln Ile Ile Ser His Ser Ser Tyr Arg Glu
        115   120   125

Glu Gly Ser Gln Gly Asp Ile Ala Leu Ile Arg Leu Ser Ser Pro Val
    130   135   140

Thr Phe Ser Arg Tyr Ile Arg Pro Ile Cys Leu Pro Ala Ala Asn Ala
145   150   155   160

Ser Phe Pro Asn Gly Leu His Cys Thr Val Thr Gly Trp Gly His Val
                165   170   175

Ala Pro Ser Val Ser Leu Gln Thr Pro Arg Pro Leu Gln Gln Leu Glu
            180   185   190

Val Pro Leu Ile Ser Arg Glu Thr Cys Ser Cys Leu Tyr Asn Ile Asn
        195   200   205

133

Ala Val Pro Glu Glu Pro His Thr Ile Gln Gln Asp Met Leu Cys Ala
210   215   220

Gly Tyr Val Lys Gly Gly Lys Asp Ala Cys Gln Gly Asp Ser Gly Gly
225   230   235   240

Pro Leu Ser Cys Pro Ile Asp Gly Leu Trp Tyr Leu Ala Gly Ile Val
                245   250   255

Ser Trp Gly Asp Ala Cys Gly Ala Pro Asn Arg Pro Gly Val Tyr Thr
                260   265   270

Leu Thr Ser Thr Tyr Ala Ser Trp Ile His His His Val Ala Glu Leu
        275   280   285

Gln Pro Arg Val Val Pro Gln Thr Gln Glu Ser Gln Pro Asp Gly His
    290   295   300

Leu Cys Asn His His Pro Val Phe Asn Leu Ala Ala Ala Gln Lys Leu
305   310   315   320

Ser Arg Pro Ile Leu Phe Leu Pro Leu Ser Leu Thr Leu Gly Leu Phe
                325   330   335

Ser Leu Trp Leu Glu His
            340

<210> 87
<211> 342
<212> PRT
<213> Rattus norvegicus

<400> 87
Met Ala Leu Arg Val Gly Leu Gly Leu Gly Gln Leu Glu Ala Leu Phe
1   5   10   15

Ile Leu Leu Leu Ile Gly Leu Leu Gln Ser Arg Ile Gly Ala Asp Gly
            20   25   30

Thr Glu Ala Ser Cys Gly Ala Val Ile Gln Pro Arg Ile Thr Gly Gly
        35   40   45

Gly Ser Ala Lys Pro Gly Gln Trp Pro Trp Gln Val Ser Ile Thr Tyr
    50   55   60

Asn Gly Val His Val Cys Gly Gly Ser Leu Val Ser Asn Gln Trp Val
                            134

                                  136

Leu Leu Tyr Ser Lys Asp Thr Glu Phe Gly Tyr Gln Pro Lys Thr Ile
195   200   205

Lys Asn Asp Met Leu Cys Ala Gly Phe Glu Glu Gly Lys Lys Asp Ala
210   215   220

Cys Lys Gly Asp Ser Gly Gly Pro Leu Val Cys Leu Val Gly Gln Ser
225   230   235   240

Trp Leu Gln Ala Gly Val Ile Ser Trp Gly Glu Gly Cys Ala Arg Gln
                245   250   255

Asn Arg Pro Gly Val Tyr Ile Arg Val Thr Ala His His Asn Trp Ile
            260   265   270

His Arg Ile Ile Pro Lys Leu Gln Phe Gln Pro Ala Arg Leu Gly Gly
        275   280   285

Gln Lys
    290

<210> 89
<211> 285
<212> PRT
<213> Mus musculus

<400> 89
Met Ala Leu Arg Val Gly Leu Gly Leu Gly Gln Leu Glu Ala Val Thr
1   5   10   15

Ile Leu Leu Leu Leu Gly Leu Leu Gln Ser Gly Ile Arg Ala Asp Gly
            20   25   30

Thr Glu Ala Ser Cys Gly Ala Val Ile Gln Pro Arg Ile Thr Gly Gly
        35   40   45

Gly Ser Ala Lys Pro Gly Gln Trp Pro Trp Gln Val Ser Ile Thr Tyr
    50   55   60

Asp Gly Asn His Val Cys Gly Gly Ser Leu Val Ser Asn Lys Trp Val
65   70   75   80

Val Ser Ala Ala His Cys Phe Pro Arg Glu His Ser Arg Glu Ala Tyr
                85   90   95

Glu Val Lys Leu Gly Ala His Gln Leu Asp Ser Tyr Ser Asn Asp Thr
            100   105   110

Val Val His Thr Val Ala Gln Ile Ile Thr His Ser Ser Tyr Arg Glu
115   120   125

Glu Gly Ser Gln Gly Asp Ile Ala Leu Ile Arg Leu Ser Ser Pro Val
130   135   140

Thr Phe Ser Arg Tyr Ile Arg Pro Ile Cys Leu Pro Ala Ala Asn Ala
145   150   155   160

Ser Phe Pro Asn Gly Leu His Cys Thr Val Thr Gly Trp Gly His Val
                165   170   175

Ala Pro Ser Val Ser Leu Gln Thr Pro Arg Pro Leu Gln Gln Leu Glu
            180   185   190

Val Pro Leu Ile Ser Arg Glu Thr Cys Ser Cys Leu Tyr Asn Ile Asn
        195   200   205

Ala Val Pro Glu Glu Pro His Thr Ile Gln Gln Asp Met Leu Cys Ala
    210   215   220

Gly Tyr Val Lys Gly Gly Lys Asp Ala Cys Gln Gly Asp Ser Gly Gly
225   230   235   240

Pro Leu Ser Cys Pro Met Glu Gly Ile Trp Tyr Leu Ala Gly Ile Val
                245   250   255

Ser Trp Gly Asp Ala Cys Gly Ala Pro Asn Arg Pro Gly Val Tyr Thr
            260   265   270

Leu Thr Ser Thr Tyr Ala Ser Trp Ile His His His Val
        275   280   285

<210> 90
<211> 395
<212> PRT
<213> Homo sapiens

<400> 90
Met Lys Asp Ser Val Lys Leu Val Ile Leu His His Val Asp His Tyr
1   5   10   15

Phe Pro Thr Cys Lys Cys Ile Met Ala Phe Gly Ile Ser Met Met Trp
            20   25   30

Leu Leu Leu Thr Thr Thr Cys Leu Ile Cys Gly Thr Leu Asn Ala Gly

138

35   40   45
Gly Phe Leu Asp Leu Glu Asn Glu Val Asn Pro Glu Val Trp Met Asn
       50   55   60
Thr Ser Glu Ile Ile Ile Tyr Asn Gly Tyr Pro Ser Glu Glu Tyr Glu
   65   70   75   80
Val Thr Thr Glu Asp Gly Tyr Ile Leu Leu Val Asn Arg Ile Pro Tyr
                   85   90   95
Gly Arg Thr His Ala Arg Ser Thr Ala Asp Ala Gly Tyr Asp Val Trp
              100   105   110
Met Gly Asn Ser Arg Gly Asn Thr Trp Ser Arg Arg His Lys Thr Leu
          115   120   125
Ser Glu Thr Asp Glu Lys Phe Trp Ala Phe Ser Phe Asp Glu Met Ala
      130   135   140
Lys Tyr Asp Leu Pro Gly Val Ile Asp Phe Ile Val Asn Lys Thr Gly
145   150   155   160
Gln Glu Lys Leu Tyr Phe Ile Gly His Ser Leu Gly Thr Thr Ile Gly
                  165   170   175
Phe Val Ala Phe Ser Thr Met Pro Glu Leu Ala Gln Arg Ile Lys Met
              180   185   190
Asn Phe Ala Leu Gly Pro Thr Ile Ser Phe Lys Tyr Pro Thr Gly Ile
          195   200   205
Phe Thr Arg Phe Phe Leu Leu Pro Asn Ser Ile Ile Lys Ala Val Phe
      210   215   220
Gly Thr Lys Gly Phe Phe Leu Glu Asp Lys Lys Thr Lys Ile Ala Ser
225   230   235   240
Thr Lys Ile Cys Asn Asn Lys Ile Leu Trp Leu Ile Cys Ser Glu Phe
                  245   250   255
Met Ser Leu Trp Ala Gly Ser Asn Lys Lys Asn Met Asn Gln Ser Arg
              260   265   270
Met Asp Val Tyr Met Ser His Ala Pro Thr Gly Ser Ser Val His Asn
          275   280   285
Ile Leu His Ile Lys Gln Leu Tyr His Ser Asp Glu Phe Arg Ala Tyr
                              139

<pre>
                  295   300
   290
Asp Trp Gly Asn Asp Ala Asp Asn Met Lys His Tyr Asn Gln Ser His
                                  315   320
305   310
Pro Pro Ile Tyr Asp Leu Thr Ala Met Lys Val Pro Thr Ala Ile Trp
                325   330   335
Ala Gly Gly His Asp Val Leu Val Thr Pro Gln Asp Val Ala Arg Ile
            340   345   350
Leu Pro Gln Ile Lys Ser Leu His Tyr Phe Lys Leu Leu Pro Asp Trp
        355   360   365
Asn His Phe Asp Phe Val Trp Gly Leu Asp Ala Pro Gln Arg Met Tyr
    370   375   380
Ser Glu Ile Ile Ala Leu Met Lys Ala Tyr Ser
385   390   395

<210> 91
<211> 351
<212> PRT
<213> Homo sapiens

<400> 91
Met Lys Asp Ser Val Lys Leu Val Ile Leu His His Val Asp His Tyr
  1   5   10   15
Phe Pro Thr Cys Lys Cys Ile Met Ala Phe Gly Ile Ser Met Met Trp
                20   25   30
Leu Leu Leu Thr Thr Thr Cys Leu Ile Cys Gly Thr Leu Asn Ala Gly
            35   40   45
Gly Phe Leu Asp Leu Glu Asn Glu Val Asn Pro Glu Val Trp Met Asn
        50   55   60
Thr Ser Glu Ile Ile Ile Tyr Asn Gly Tyr Pro Ser Glu Glu Tyr Glu
    65   70   75   80
Val Thr Thr Glu Asp Gly Tyr Ile Leu Leu Val Asn Arg Ile Pro Tyr
                85   90   95
Gly Arg Thr His Ala Arg Ser Thr Gly Pro Arg Pro Val Val Tyr Met
            100   105   110
</pre>

Gln His Ala Leu Phe Ala Asp Asn Ala Tyr Trp Leu Glu Asn Tyr Ala
115   120   125

Asn Gly Ser Leu Gly Phe Leu Leu Ala Asp Ala Gly Tyr Asp Val Trp
130   135   140

Met Gly Asn Ser Arg Gly Asn Thr Trp Ser Arg Arg His Lys Thr Leu
145   150   155   160

Ser Glu Thr Asp Glu Lys Phe Trp Ala Phe Ser Phe Asp Glu Met Ala
                165   170   175

Lys Tyr Asp Leu Pro Gly Val Ile Asp Phe Ile Val Asn Lys Thr Gly
            180   185   190

Gln Glu Lys Leu Tyr Phe Ile Gly His Ser Leu Gly Thr Thr Ile Gly
        195   200   205

Phe Phe Leu Glu Asp Lys Lys Thr Lys Ile Ala Ser Thr Lys Ile Cys
    210   215   220

Asn Asn Lys Ile Leu Trp Leu Ile Cys Ser Glu Phe Met Ser Leu Trp
225   230   235   240

Ala Gly Ser Asn Lys Lys Asn Met Asn Gln Leu Tyr His Ser Asp Glu
            245   250   255

Phe Arg Ala Tyr Asp Trp Gly Asn Asp Ala Asp Asn Met Lys His Tyr
        260   265   270

Asn Gln Ser His Pro Pro Ile Tyr Asp Leu Thr Ala Met Lys Val Pro
        275   280   285

Thr Ala Ile Trp Ala Gly Gly His Asp Val Leu Val Thr Pro Gln Asp
    290   295   300

Val Ala Arg Ile Leu Pro Gln Ile Lys Ser Leu His Tyr Phe Lys Leu
305   310   315   320

Leu Pro Asp Trp Asn His Phe Asp Phe Val Trp Gly Leu Asp Ala Pro
            325   330   335

Gln Arg Met Tyr Ser Glu Ile Ile Ala Leu Met Lys Ala Tyr Ser
        340   345   350

<210> 92
<211> 399
                            141

<212> PRT
<213> Homo sapiens

<400> 92

Met Lys Met Arg Phe Leu Gly Leu Val Val Cys Leu Val Leu Trp Pro
1   5   10   15

Leu His Ser Glu Gly Ser Gly Gly Lys Leu Thr Ala Val Asp Pro Glu
            20   25   30

Thr Asn Met Asn Val Ser Glu Ile Ile Ser Tyr Trp Gly Phe Pro Ser
        35   40   45

Glu Glu Tyr Leu Val Glu Thr Glu Asp Gly Tyr Ile Leu Cys Leu Asn
    50   55   60

Arg Ile Pro His Gly Arg Lys Asn His Ser Asp Lys Gly Pro Lys Pro
65   70   75   80

Val Val Phe Leu Gln His Gly Leu Leu Ala Asp Ser Ser Asn Trp Val
                85   90   95

Thr Asn Leu Ala Asn Ser Ser Leu Gly Phe Ile Leu Ala Asp Ala Gly
            100   105   110

Phe Asp Val Trp Met Gly Asn Ser Arg Gly Asn Thr Trp Ser Arg Lys
        115   120   125

His Lys Thr Leu Ser Val Ser Gln Asp Glu Phe Trp Ala Phe Ser Tyr
    130   135   140

Asp Glu Met Ala Lys Tyr Asp Leu Pro Ala Ser Ile Asn Phe Ile Leu
145   150   155   160

Asn Lys Thr Gly Gln Glu Gln Val Tyr Tyr Val Gly His Ser Gln Gly
            165   170   175

Thr Thr Ile Gly Phe Ile Ala Phe Ser Gln Ile Pro Glu Leu Ala Lys
        180   185   190

Arg Ile Lys Met Phe Phe Ala Leu Gly Pro Val Ala Ser Val Ala Phe
        195   200   205

Cys Thr Ser Pro Met Ala Lys Leu Gly Arg Leu Pro Asp His Leu Ile
    210   215   220

Lys Asp Leu Phe Gly Asp Lys Glu Phe Leu Pro Gln Ser Ala Phe Leu
225   230   235   240

142

Lys Trp Leu Gly Thr His Val Cys Thr His Val Ile Leu Lys Glu Leu
                245   250   255

Cys Gly Asn Leu Cys Phe Leu Leu Cys Gly Phe Asn Glu Arg Asn Leu
            260   265   270

Asn Met Ser Arg Val Asp Val Tyr Thr Thr His Ser Pro Ala Gly Thr
        275   280   285

Ser Val Gln Asn Met Leu His Trp Ser Gln Ala Val Lys Phe Gln Lys
    290   295   300

Phe Gln Ala Phe Asp Trp Gly Ser Ser Ala Lys Asn Tyr Phe His Tyr
305   310   315   320

Asn Gln Ser Tyr Pro Pro Thr Tyr Asn Val Lys Asp Met Leu Val Pro
                325   330   335

Thr Ala Val Trp Ser Gly Gly His Asp Trp Leu Ala Asp Val Tyr Asp
            340   345   350

Val Asn Ile Leu Leu Thr Gln Ile Thr Asn Leu Val Phe His Glu Ser
        355   360   365

Ile Pro Glu Trp Glu His Leu Asp Phe Ile Trp Gly Leu Asp Ala Pro
    370   375   380

Trp Arg Leu Tyr Asn Lys Ile Ile Asn Leu Met Arg Lys Tyr Gln
385   390   395

<210> 93
<211> 399
<212> PRT
<213> Homo sapiens

<400> 93
Met Lys Met Arg Phe Leu Gly Leu Val Val Cys Leu Val Leu Trp Thr
  1   5   10   15

Leu His Ser Glu Gly Ser Gly Gly Lys Leu Thr Ala Val Asp Pro Glu
            20   25   30

Thr Asn Met Asn Val Ser Glu Ile Ile Ser Tyr Trp Gly Phe Pro Ser
        35   40   45

Glu Glu Tyr Leu Val Glu Thr Glu Asp Gly Tyr Ile Leu Cys Leu Asn

50   55   60
Arg Ile Pro His Gly Arg Lys Asn His Ser Asp Lys Gly Pro Lys Pro
  65   70   75   80
Val Val Phe Leu Gln His Gly Leu Leu Ala Asp Ser Ser Asn Trp Val
                    85   90   95
Thr Asn Leu Ala Asn Ser Ser Leu Gly Phe Ile Leu Ala Asp Ala Gly
                100   105   110
Phe Asp Val Trp Met Gly Asn Ser Arg Gly Asn Thr Trp Ser Arg Lys
            115   120   125
His Lys Thr Leu Ser Val Ser Gln Asp Glu Phe Trp Ala Phe Ser Tyr
        130   135   140
Asp Glu Met Ala Lys Tyr Asp Leu Pro Ala Ser Ile Asn Phe Ile Leu
145   150   155   160
Asn Lys Thr Gly Gln Glu Gln Val Tyr Tyr Val Gly His Ser Gln Gly
                165   170   175
Thr Thr Ile Gly Phe Ile Ala Phe Ser Gln Ile Pro Glu Leu Ala Lys
            180   185   190
Arg Ile Lys Met Phe Phe Ala Leu Gly Pro Val Ala Ser Val Ala Phe
        195   200   205
Cys Thr Ser Pro Met Ala Lys Leu Gly Arg Leu Pro Asp His Leu Ile
    210   215   220
Lys Asp Leu Phe Gly Asp Lys Glu Phe Leu Pro Gln Ser Ala Phe Leu
225   230   235   240
Lys Trp Leu Gly Thr His Val Cys Thr His Val Ile Leu Lys Glu Leu
                245   250   255
Cys Gly Asn Leu Cys Phe Leu Leu Cys Gly Phe Asn Glu Arg Asn Leu
                260   265   270
Asn Met Ser Arg Val Asp Val Tyr Thr Thr His Ser Pro Ala Gly Thr
            275   280   285
Ser Val Gln Asn Met Leu His Trp Ser Gln Ala Val Lys Phe Gln Lys
        290   295   300
Phe Gln Ala Phe Asp Trp Gly Ser Ser Ala Lys Asn Tyr Phe His Tyr
                            144

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                                              315              320
305              310
Asn Gln Ser Tyr Pro Pro Thr Tyr Asn Val Lys Asp Met Leu Val Pro
                 325              330              335

Thr Ala Val Trp Ser Gly Gly His Asp Trp Leu Ala Asp Val Tyr Asp
        340              345              350

Val Asn Ile Leu Leu Thr Gln Ile Thr Asn Leu Val Phe His Glu Ser
        355              360              365

Ile Pro Glu Trp Glu His Leu Asp Phe Ile Trp Gly Leu Asp Ala Pro
     370              375              380

Trp Arg Leu Tyr Asn Lys Ile Ile Asn Leu Met Arg Lys Tyr Gln
385              390              395
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<210> 94
<211> 399
<212> PRT
<213> Homo sapiens

```
<400> 94
Met Lys Met Arg Phe Leu Gly Leu Val Val Cys Leu Val Leu Trp Thr
1                 5              10              15

Leu His Ser Glu Gly Ser Arg Gly Lys Leu Thr Ala Val Asp Pro Glu
             20              25              30

Thr Asn Met Asn Val Ser Glu Ile Ile Ser Tyr Trp Gly Phe Pro Ser
        35              40              45

Glu Glu Tyr Leu Val Glu Thr Glu Asp Gly Tyr Ile Leu Cys Leu Asn
     50              55              60

Arg Ile Pro His Gly Arg Lys Asn His Ser Asp Lys Gly Pro Lys Pro
65              70              75              80

Val Val Phe Leu Gln His Gly Leu Leu Ala Asp Ser Ser Asn Trp Val
             85              90              95

Thr Asn Leu Ala Asn Ser Ser Leu Gly Phe Ile Leu Ala Asp Ala Gly
        100              105              110

Phe Asp Val Trp Met Gly Asn Ser Arg Gly Asn Thr Trp Ser Arg Lys
     115              120              125
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145

His Lys Thr Leu Ser Val Ser Gln Asp Glu Phe Trp Ala Phe Ser Tyr
     130   135   140

Asp Glu Met Ala Lys Tyr Asp Leu Pro Ala Ser Ile Asn Phe Ile Leu
145   150   155   160

Asn Lys Thr Gly Gln Glu Gln Val Tyr Tyr Val Gly His Ser Gln Gly
                165   170   175

Thr Thr Ile Gly Phe Ile Ala Phe Ser Gln Ile Pro Glu Leu Ala Lys
              180   185   190

Arg Ile Lys Met Phe Phe Ala Leu Gly Pro Val Ala Ser Val Ala Phe
         195   200   205

Cys Thr Ser Pro Met Ala Lys Leu Gly Arg Leu Pro Asp His Leu Ile
     210   215   220

Lys Asp Leu Phe Gly Asp Lys Glu Phe Leu Pro Gln Ser Ala Phe Leu
225   230   235   240

Lys Trp Leu Gly Thr His Val Cys Thr His Val Ile Leu Lys Glu Leu
              245   250   255

Cys Gly Asn Leu Cys Phe Leu Leu Cys Gly Phe Asn Glu Arg Asn Leu
              260   265   270

Asn Met Ser Arg Val Asp Val Tyr Thr Thr His Ser Pro Ala Gly Thr
         275   280   285

Ser Val Gln Asn Met Leu His Trp Ser Gln Ala Val Lys Phe Gln Lys
     290   295   300

Phe Gln Ala Phe Asp Trp Gly Ser Ser Ala Lys Asn Tyr Phe His Tyr
305   310   315   320

Asn Gln Ser Tyr Pro Pro Thr Tyr Asn Val Lys Asp Met Leu Val Pro
              325   330   335

Thr Ala Val Trp Ser Gly Gly His Asp Trp Leu Ala Asp Val Tyr Asp
              340   345   350

Val Asn Ile Leu Leu Thr Gln Ile Thr Asn Leu Val Phe His Glu Ser
         355   360   365

Ile Pro Glu Trp Glu His Leu Asp Phe Ile Trp Gly Leu Asp Ala Pro
     370   375   380

146

Trp Arg Leu Tyr Asn Lys Ile Ile Asn Leu Met Arg Lys Tyr Gln
385   390   395

<210> 95
<211> 217
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: abhydrolase,
      alpha/beta hydrolase fold catalytic domain
      sequence

<400> 95
Phe Asp Val Ile Leu Phe Asp Leu Arg Gly Phe Gly Gln Ser Ser Pro
 1   5   10   15

Ser Asp Leu Ala Glu Tyr Arg Phe Asp Asp Leu Ala Glu Asp Leu Glu
            20   25   30

Ala Leu Leu Asp Ala Leu Gly Leu Asp Lys Val Ile Leu Val Gly His
        35   40   45

Ser Met Gly Gly Ala Ile Ala Ala Ala Tyr Ala Ala Lys Tyr Pro Glu
     50   55   60

Arg Val Lys Ala Leu Val Leu Val Ser Ala Pro His Pro Ala Leu Leu
65   70   75   80

Ser Ser Arg Leu Phe Pro Arg Asn Leu Phe Gly Leu Leu Leu Ala Asn
                85   90   95

Phe Arg Asn Arg Leu Leu Arg Ser Val Glu Ala Leu Leu Gly Arg Ala
            100   105   110

Leu Lys Gln Phe Phe Leu Leu Gly Arg Pro Leu Val Ser Asp Phe Leu
        115   120   125

Lys Gln Phe Glu Leu Ser Ser Leu Ile Arg Phe Gly Glu Asp Asp Gly
        130   135   140

Gly Asp Gly Leu Leu Trp Val Ala Leu Gly Lys Leu Leu Gln Trp Asp
145   150   155   160

Val Ser Ala Asp Leu Lys Arg Ile Lys Val Pro Thr Leu Val Ile Trp
                165   170   175

147

Gly Asp Asp Asp Pro Leu Val Pro Pro Asp Ala Ser Glu Lys Leu Ser
                180   185   190

Ala Leu Phe Pro Asn Ala Glu Val Val Val Ile Asp Asp Ala Gly His
          195   200   205

Leu Ala Gln Leu Glu Lys Pro Glu Glu
        210   215

<210> 96
<211> 322
<212> PRT
<213> Mus musculus

<400> 96
Met Gly Ile Gln Gly Pro Val Leu Leu Leu Leu Leu Leu Cys Val Met
  1   5   10   15

Leu Gly Lys Pro Gly Ser Arg Glu Glu Ser Gln Ala Ala Asp Leu Lys
              20   25   30

Ser Thr Asp Ile Lys Leu Leu Ser Met Pro Cys Gly Arg Arg Asn Asp
        35   40   45

Thr Arg Ser Arg Ile Val Gly Gly Ile Glu Ser Met Gln Gly Arg Trp
      50   55   60

Pro Trp Gln Ala Ser Leu Arg Leu Lys Lys Ser His Arg Cys Gly Gly
  65   70   75   80

Ser Leu Leu Ser Arg Arg Trp Val Leu Thr Ala Ala His Cys Phe Arg
              85   90   95

Lys Tyr Leu Asp Pro Glu Lys Trp Thr Val Gln Leu Gly Gln Leu Thr
          100   105   110

Ser Lys Pro Ser Tyr Trp Asn Arg Lys Ala Tyr Ser Gly Arg Tyr Arg
        115   120   125

Val Lys Asp Ile Ile Val Asn Ser Glu Asp Lys Leu Lys Ser His Asp
      130   135   140

Leu Ala Leu Leu Arg Leu Ala Ser Ser Val Thr Tyr Asn Lys Asp Ile
145   150   155   160

Gln Pro Val Cys Val Gln Pro Ser Thr Phe Thr Ser Gln His Gln Pro
          165   170   175

                              148

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Arg Cys Trp Val Thr Gly Trp Gly Val Leu Gln Glu Asp Leu Lys Pro
            180                 185                 190

Leu Pro Pro Pro Tyr His Leu Arg Glu Val Gln Val Ser Ile Leu Asn
        195                 200                 205

Asn Ser Arg Cys Gln Glu Leu Phe Glu Ile Phe Ser Leu His His Leu
        210                 215                 220

Ile Thr Lys Asp Val Phe Cys Ala Gly Ala Glu Asp Gly Ser Ala Asp
225                 230                 235                 240

Thr Cys Ser Gly Asp Ser Gly Gly Pro Leu Val Cys Asn Met Asp Gly
            245                 250                 255

Leu Trp Tyr Gln Ile Gly Ile Val Ser Trp Gly Ile Gly Cys Gly Arg
            260                 265                 270

Pro Asn Leu Pro Gly Ile Tyr Thr Asn Val Ser His Tyr Tyr Asn Trp
        275                 280                 285

Ile Glu Thr Met Met Ile Leu Asn Gly Ala Val Arg Arg Asp Leu Ala
        290                 295                 300

Leu Pro Leu Leu Ser Ile Thr Leu Leu Gln Ala Pro Trp Leu Leu Arg
305                 310                 315                 320

Pro Thr


<210> 97
<211> 282
<212> PRT
<213> Mus musculus

<400> 97
Met Pro Cys Gly Arg Arg Asn Asp Thr Arg Ser Arg Ile Val Gly Gly
  1                 5                 10                  15

Ile Glu Ser Met Gln Gly Arg Trp Pro Trp Gln Ala Ser Leu Arg Leu
            20                  25                  30

Lys Lys Ser His Arg Cys Gly Gly Ser Leu Leu Ser Arg Arg Trp Val
        35                  40                  45

Leu Thr Ala Ala His Cys Phe Arg Lys Tyr Leu Asp Pro Glu Lys Trp
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60
                              55
        50

Thr Val Gln Leu Gly Gln Leu Thr Ser Lys Pro Ser Tyr Trp Asn Arg
 65   70   75   80

Lys Ala Tyr Ser Gly Arg Tyr Arg Val Lys Asp Ile Ile Val Asn Ser
                85   90   95

Glu Asp Lys Leu Lys Ser His Asp Leu Ala Leu Leu Arg Leu Ala Ser
            100   105   110

Ser Val Thr Tyr Asn Lys Asp Ile Gln Pro Val Cys Val Gln Pro Ser
        115   120   125

Thr Phe Thr Ser Gln His Gln Pro Arg Cys Trp Val Thr Gly Trp Gly
    130   135   140

Val Leu Gln Glu Asp Leu Lys Pro Leu Pro Pro Tyr His Leu Arg
145   150   155   160

Glu Val Gln Val Ser Ile Leu Asn Asn Ser Arg Cys Gln Glu Leu Phe
                165   170   175

Glu Ile Phe Ser Leu His His Leu Ile Thr Lys Asp Val Phe Cys Ala
            180   185   190

Gly Ala Glu Asp Gly Ser Ala Asp Thr Cys Ser Gly Asp Ser Gly Gly
        195   200   205

Pro Leu Val Cys Asn Met Asp Gly Leu Trp Tyr Gln Ile Gly Ile Val
    210   215   220

Ser Trp Gly Ile Gly Cys Gly Arg Pro Asn Leu Pro Gly Ile Tyr Thr
225   230   235   240

Asn Val Ser His Tyr Tyr Asn Trp Ile Glu Thr Met Met Ile Leu Asn
                245   250   255

Gly Ala Val Arg Arg Asp Leu Ala Leu Pro Leu Leu Ser Ile Thr Leu
        260   265   270

Leu Gln Ala Pro Trp Leu Leu Arg Pro Thr
        275   280

    <210> 98
    <211> 324
    <212> PRT
                        150

<213> Mus musculus

<400> 98

Met Gly Ala Arg Gly Lys Thr Leu Val Pro Leu Leu Val Val Val Ala
1   5   10   15

Thr Ala Ala Met Ala Leu Gln Ser Thr Tyr Leu Gln Val Asp Pro Glu
                20   25   30

Lys Pro Glu Leu Gln Glu Pro Asp Leu Leu Ser Gly Pro Cys Gly His
            35   40   45

Arg Thr Ile Pro Ser Arg Ile Val Gly Gly Asp Asp Ala Glu Leu Gly
        50   55   60

Arg Trp Pro Trp Gln Gly Ser Leu Arg Val Trp Gly Asn His Leu Cys
65   70   75   80

Gly Ala Thr Leu Leu Asn Arg Arg Trp Val Leu Thr Ala Ala His Cys
                85   90   95

Phe Gln Lys Asp Asn Asp Pro Phe Asp Trp Thr Val Gln Phe Gly Glu
            100   105   110

Leu Thr Ser Arg Pro Ser Leu Trp Asn Leu Gln Ala Tyr Ser Asn Arg
        115   120   125

Tyr Gln Ile Glu Asp Ile Phe Leu Ser Pro Lys Tyr Ser Glu Gln Tyr
        130   135   140

Pro Asn Asp Ile Ala Leu Leu Lys Leu Ser Ser Pro Val Thr Tyr Asn
145   150   155   160

Asn Phe Ile Gln Pro Ile Cys Leu Leu Asn Ser Thr Tyr Lys Phe Glu
                165   170   175

Asn Arg Thr Asp Cys Trp Val Thr Gly Trp Gly Ala Ile Gly Glu Asp
            180   185   190

Glu Ser Leu Pro Ser Pro Asn Thr Leu Gln Glu Val Gln Val Ala Ile
        195   200   205

Ile Asn Asn Ser Met Cys Asn His Met Tyr Lys Lys Pro Asp Phe Arg
        210   215   220

Thr Asn Ile Trp Gly Asp Met Val Cys Ala Gly Thr Pro Glu Gly Gly
225   230   235   240

151

Lys Asp Ala Cys Phe Gly Asp Ser Gly Gly Pro Leu Ala Cys Asp Gln
                  245   250   255

Asp Thr Val Trp Tyr Gln Val Gly Val Val Ser Trp Gly Ile Gly Cys
              260   265   270

Gly Arg Pro Asn Arg Pro Gly Val Tyr Thr Asn Ile Ser His His Tyr
          275   280   285

Asn Trp Ile Gln Ser Thr Met Ile Arg Asn Gly Leu Leu Arg Pro Asp
      290   295   300

Pro Val Pro Leu Leu Leu Phe Leu Thr Leu Ala Trp Ala Ser Ser Leu
305   310   315   320

Leu Arg Pro Ala

<210> 99
<211> 296
<212> PRT
<213> Mus musculus

<400> 99
Met Ala Leu Gln Ser Thr Tyr Leu Gln Val Asp Pro Glu Lys Pro Glu
  1   5   10   15

Leu Gln Glu Pro Asp Leu Leu Ser Gly Pro Cys Gly His Arg Thr Ile
              20   25   30

Pro Ser Arg Ile Val Gly Gly Asp Asp Ala Glu Leu Gly Arg Trp Pro
          35   40   45

Trp Gln Gly Ser Leu Arg Val Trp Gly Asn His Leu Cys Gly Ala Thr
      50   55   60

Leu Leu Asn Arg Arg Trp Val Leu Thr Ala Ala His Cys Phe Gln Lys
  65   70   75   80

Asp Asn Asp Pro Phe Asp Trp Thr Val Gln Phe Gly Glu Leu Thr Ser
              85   90   95

Arg Pro Ser Leu Trp Asn Leu Gln Ala Tyr Ser Asn Arg Tyr Gln Ile
          100   105   110

Glu Asp Ile Phe Leu Ser Pro Lys Tyr Ser Glu Gln Tyr Pro Asn Asp
      115   120   125

```
Ile Ala Leu Leu Lys Leu Ser Ser Pro Val Thr Tyr Asn Asn Phe Ile
    130                 135                 140

Gln Pro Ile Cys Leu Leu Asn Ser Thr Tyr Lys Phe Glu Asn Arg Thr
145                 150                 155                 160

Asp Cys Trp Val Thr Gly Trp Gly Ala Ile Gly Glu Asp Glu Ser Leu
                165                 170                 175

Pro Ser Pro Asn Thr Leu Gln Glu Val Gln Val Ala Ile Ile Asn Asn
            180                 185                 190

Ser Met Cys Asn His Met Tyr Lys Lys Pro Asp Phe Arg Thr Asn Ile
        195                 200                 205

Trp Gly Asp Met Val Cys Ala Gly Thr Pro Glu Gly Gly Lys Asp Ala
    210                 215                 220

Cys Phe Gly Asp Ser Gly Gly Pro Leu Ala Cys Asp Gln Asp Thr Val
225                 230                 235                 240

Trp Tyr Gln Val Gly Val Val Ser Trp Gly Ile Gly Cys Gly Arg His
                245                 250                 255

Asn Arg Pro Gly Val Tyr Thr Asn Ile Ser His His Tyr Asn Trp Ile
            260                 265                 270

Gln Ser Thr Met Ile Arg Asn Gly Leu Leu Arg Pro Asp Pro Val Pro
        275                 280                 285

Leu Leu Leu Phe Leu Thr Leu Ala
    290                 295


<210> 100
<211> 312
<212> PRT
<213> Mus musculus

<400> 100
Met Gly Ala Arg Gly Ala Leu Leu Leu Ala Leu Leu Leu Ala Arg Ala
  1                 5                 10                 15

Gly Leu Arg Lys Pro Glu Ser Gln Glu Ala Ala Pro Leu Ser Gly Pro
            20                 25                 30

Cys Gly Arg Arg Val Ile Thr Ser Arg Ile Val Gly Gly Glu Asp Ala
```

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              35                  40                  45

Glu Leu Gly Arg Trp Pro Trp Gln Gly Ser Leu Arg Leu Trp Asp Ser
     50                  55                  60

His Val Cys Gly Val Ser Leu Leu Ser His Arg Trp Ala Leu Thr Ala
 65                  70                  75                  80

Ala His Cys Phe Glu Thr Asp Leu Ser Asp Pro Ser Gly Trp Met Val
                 85                  90                  95

Gln Phe Gly Gln Leu Thr Ser Met Pro Ser Phe Trp Ser Leu Gln Ala
            100                 105                 110

Tyr Tyr Thr Arg Tyr Phe Val Ser Asn Ile Tyr Leu Ser Pro Arg Tyr
            115                 120                 125

Leu Gly Asn Ser Pro Tyr Asp Ile Ala Leu Val Lys Leu Ser Ala Pro
     130                 135                 140

Val Thr Tyr Thr Lys His Ile Gln Pro Ile Cys Leu Gln Ala Ser Thr
145                 150                 155                 160

Phe Glu Phe Glu Asn Arg Thr Asp Cys Trp Val Thr Gly Trp Gly Tyr
                 165                 170                 175

Ile Lys Glu Asp Glu Ala Leu Pro Ser Pro His Thr Leu Gln Glu Val
            180                 185                 190

Gln Val Ala Ile Ile Asn Asn Ser Met Cys Asn His Leu Phe Leu Lys
            195                 200                 205

Tyr Ser Phe Arg Lys Asp Ile Phe Gly Asp Met Val Cys Ala Gly Asn
     210                 215                 220

Ala Gln Gly Gly Lys Asp Ala Cys Phe Gly Asp Ser Gly Gly Pro Leu
225                 230                 235                 240

Ala Cys Asn Lys Asn Gly Leu Trp Tyr Gln Ile Gly Val Val Ser Trp
            245                 250                 255

Gly Val Gly Cys Gly Arg Pro Asn Arg Pro Gly Val Tyr Thr Asn Ile
            260                 265                 270

Ser His His Phe Glu Trp Ile Gln Lys Leu Met Ala Gln Ser Gly Met
     275                 280                 285

Ser Gln Pro Asp Pro Ser Trp Pro Leu Leu Phe Phe Pro Leu Leu Trp

                              154
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Ala Leu Pro Leu Leu Gly Pro Val
305   310

<210> 101
<211> 229
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Tryp_SPc,
      Trypsin-like serine protease domain sequence

<400> 101
Ile Val Gly Gly Ser Glu Ala Asn Ile Gly Ser Phe Pro Trp Gln Val
  1   5   10   15

Ser Leu Gln Tyr Arg Gly Gly Arg His Phe Cys Gly Gly Ser Leu Ile
            20   25   30

Ser Pro Arg Trp Val Leu Thr Ala Ala His Cys Val Tyr Gly Ser Ala
        35   40   45

Pro Ser Ser Ile Arg Val Arg Leu Gly Ser His Asp Leu Ser Ser Gly
    50   55   60

Glu Glu Thr Gln Thr Val Lys Val Ser Lys Val Ile Val His Pro Asn
 65   70   75   80

Tyr Asn Pro Ser Thr Tyr Asp Asn Asp Ile Ala Leu Leu Lys Leu Ser
                85   90   95

Glu Pro Val Thr Leu Ser Asp Thr Val Arg Pro Ile Cys Leu Pro Ser
            100   105   110

Ser Gly Tyr Asn Val Pro Ala Gly Thr Thr Cys Thr Val Ser Gly Trp
        115   120   125

Gly Arg Thr Ser Glu Ser Ser Gly Ser Leu Pro Asp Thr Leu Gln Glu
    130   135   140

Val Asn Val Pro Ile Val Ser Asn Ala Thr Cys Arg Arg Ala Tyr Ser
145   150   155   160

Gly Gly Pro Ala Ile Thr Asp Asn Met Leu Cys Ala Gly Gly Leu Glu
                165   170   175

Gly Gly Lys Asp Ala Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys
            180   185   190

Asn Asp Pro Arg Trp Val Leu Val Gly Ile Val Ser Trp Gly Ser Tyr
        195   200   205

Gly Cys Ala Arg Pro Asn Lys Pro Gly Val Tyr Thr Arg Val Ser Ser
    210   215   220

Tyr Leu Asp Trp Ile
225

<210> 102
<211> 215
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Trypsin domain
        sequence

<400> 102
Gly Gly Arg Glu Ala Gln Ala Gly Ser Phe Pro Trp Gln Val Ser Leu
  1   5   10   15

Gln Val Ser Ser Gly His Phe Cys Gly Gly Ser Leu Ile Ser Glu Asn
            20   25   30

Trp Val Leu Thr Ala Ala His Cys Val Ser Gly Ala Ser Ser Val Arg
        35   40   45

Val Val Leu Gly Glu His Asn Leu Gly Thr Thr Glu Gly Thr Glu Gln
    50   55   60

Lys Phe Asp Val Lys Lys Ile Ile Val His Pro Asn Tyr Asn Pro Asp
  65   70   75   80

Thr Asn Asp Ile Ala Leu Leu Lys Leu Lys Ser Pro Val Thr Leu Gly
                85   90   95

Asp Thr Val Arg Pro Ile Cys Leu Pro Ser Ala Ser Ser Asp Leu Pro
            100   105   110

Val Gly Thr Thr Cys Ser Val Ser Gly Trp Gly Arg Thr Lys Asn Leu
        115   120   125

156

Gly Thr Ser Asp Thr Leu Gln Glu Val Val Val Pro Ile Val Ser Arg
    130   135   140

Glu Thr Cys Arg Ser Ala Tyr Gly Gly Thr Val Thr Asp Thr Met Ile
145   150   155   160

Cys Ala Gly Ala Leu Gly Gly Lys Asp Ala Cys Gln Gly Asp Ser Gly
                165   170   175

Gly Pro Leu Val Cys Ser Asp Gly Glu Leu Val Gly Ile Val Ser Trp
            180   185   190

Gly Tyr Gly Cys Ala Val Gly Asn Tyr Pro Gly Val Tyr Thr Arg Val
        195   200   205

Ser Arg Tyr Leu Asp Trp Ile
    210   215

<210> 103
<211> 525
<212> PRT
<213> Mus musculus

<400> 103
Met Leu Trp Leu Trp Leu Gly Leu Ser Gly Gln Lys Leu Leu Leu Trp
  1   5   10   15

Gly Ala Ala Ser Ala Val Ser Leu Ala Gly Ala Thr Ile Leu Ile Ser
            20   25   30

Ile Phe Pro Met Leu Val Ser Tyr Ala Arg Lys Trp Gln Gln Met Arg
            35   40   45

Ser Ile Pro Ser Val Ala Arg Ala Tyr Pro Leu Val Gly His Ala Leu
        50   55   60

Tyr Met Lys Pro Asn Asn Ala Glu Phe Phe Gln Gln Leu Ile Tyr Tyr
 65   70   75   80

Thr Glu Glu Phe Arg His Leu Pro Ile Ile Lys Leu Trp Ile Gly Pro
                85   90   95

Val Pro Leu Val Ala Leu Tyr Lys Ala Glu Asn Val Glu Val Ile Leu
            100   105   110

Thr Ser Ser Lys Gln Ile Asp Lys Ser Phe Leu Tyr Lys Phe Leu Gln
        115   120   125

                        157

Pro Trp Leu Gly Leu Gly Leu Leu Thr Ser Thr Gly Ser Lys Trp Arg
130   135   140

Thr Arg Arg Lys Met Leu Thr Pro Thr Phe His Phe Thr Ile Leu Glu
145   150   155   160

Asn Phe Leu Asp Val Met Asn Glu Gln Ala Asn Ile Leu Val Asn Lys
                165   170   175

Leu Glu Lys His Val Asn Gln Glu Ala Phe Asn Cys Phe Phe Tyr Ile
            180   185   190

Thr Leu Cys Ala Leu Asp Ile Ile Cys Glu Thr Ala Met Gly Lys Asn
        195   200   205

Ile Gly Ala Gln Ser Asn Asn Asp Ser Glu Tyr Val Arg Thr Val Tyr
    210   215   220

Arg Met Ser Asp Met Ile Tyr Arg Arg Met Lys Met Pro Trp Leu Trp
225   230   235   240

Phe Asp Leu Trp Tyr Leu Val Phe Lys Glu Gly Arg Asp His Lys Arg
                245   250   255

Gly Leu Lys Cys Leu His Thr Phe Thr Asn Asn Val Ile Ala Glu Arg
            260   265   270

Val Lys Glu Arg Lys Ala Glu Glu Asp Trp Thr Gly Ala Gly Arg Gly
        275   280   285

Pro Ile Pro Ser Lys Asn Lys Arg Lys Ala Phe Leu Asp Leu Leu Leu
    290   295   300

Ser Val Thr Asp Glu Glu Gly Asn Arg Leu Ser Gln Glu Asp Ile Arg
305   310   315   320

Glu Glu Val Asp Thr Phe Met Phe Glu Gly His Asp Thr Thr Ala Ala
                325   330   335

Ala Ile Asn Trp Ser Leu Tyr Leu Leu Gly Thr Asn Pro Glu Val Gln
            340   345   350

Arg Lys Val Asp Gln Glu Leu Asp Glu Val Phe Gly Arg Ser His Arg
        355   360   365

Pro Val Thr Leu Glu Asp Leu Lys Lys Leu Lys Tyr Leu Asp Cys Val
    370   375   380

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Ile Lys Glu Thr Leu Arg Val Phe Pro Ser Val Pro Leu Phe Ala Arg
385                 390                 395                 400

Ser Leu Ser Glu Asp Cys Glu Val Gly Gly Tyr Lys Val Thr Lys Gly
                405                 410                 415

Thr Glu Ala Ile Ile Ile Pro Tyr Ala Leu His Arg Asp Pro Arg Tyr
                420                 425                 430

Phe Pro Asp Pro Glu Glu Phe Arg Pro Glu Arg Phe Phe Pro Glu Asn
            435                 440                 445

Ser Gln Gly Arg His Pro Tyr Ala Tyr Val Pro Phe Ser Ala Gly Pro
        450                 455                 460

Arg Asn Cys Ile Gly Gln Lys Phe Ala Val Met Glu Glu Lys Thr Ile
465                 470                 475                 480

Leu Ala Cys Ile Leu Arg Gln Phe Trp Val Glu Ser Asn Gln Lys Arg
                485                 490                 495

Glu Glu Leu Gly Leu Ala Gly Asp Leu Ile Leu Arg Pro Asn Asn Gly
            500                 505                 510

Ile Trp Ile Lys Leu Lys Arg Arg His Glu Asp Asp Pro
        515                 520                 525


<210> 104
<211> 511
<212> PRT
<213> Caenorhabditis elegans

<400> 104
Met Gly Val Ile Ile Pro Ala Val Leu Leu Ala Ser Ala Thr Ile Ile
  1               5                  10                  15

Ala Trp Leu Leu Tyr Lys His Leu Arg Met Arg Gln Ala Leu Lys His
                20                  25                  30

Leu Asn Gln Pro Arg Ser Tyr Pro Ile Val Gly His Gly Leu Val Thr
            35                  40                  45

Lys Pro Asp Pro Glu Gly Phe Met Asn Gln Val Ile Gly Met Gly Tyr
        50                  55                  60

Leu Tyr Pro Asp Pro Arg Met Cys Leu Leu Trp Ile Gly Pro Phe Pro

                              159
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                                      75                    80
65                  70
Cys Leu Met Leu Tyr Ser Ala Asp Leu Val Glu Pro Ile Phe Ser Ser
                    85                  90                  95

Thr Lys His Leu Asn Lys Gly Phe Ala Tyr Val Leu Leu Glu Pro Trp
            100                 105                 110

Leu Gly Ile Ser Ile Leu Thr Ser Gln Lys Glu Gln Trp Arg Pro Lys
        115                 120                 125

Arg Lys Leu Leu Thr Pro Thr Phe His Tyr Asp Ile Leu Lys Asp Phe
    130                 135                 140

Leu Pro Ile Phe Asn Glu Gln Ser Lys Ile Leu Val Gln Lys Met Cys
145                 150                 155                 160

Ser Leu Gly Ala Glu Glu Glu Val Asp Val Leu Ser Val Ile Thr Leu
                165                 170                 175

Cys Thr Leu Asp Ile Ile Cys Glu Thr Ser Met Gly Lys Ala Ile Gly
            180                 185                 190

Ala Gln Leu Ala Glu Asn Asn Glu Tyr Val Trp Ala Val His Thr Ile
        195                 200                 205

Asn Lys Leu Ile Ser Lys Arg Thr Asn Asn Pro Leu Met Trp Asn Ser
    210                 215                 220

Phe Ile Tyr Asn Leu Tyr Asp Ser Phe Ile Ile Lys Lys Val Asn Ser
225                 230                 235                 240

Ile Leu Phe Phe Arg Thr Glu Asp Gly Arg Thr His Glu Lys Cys Leu
            245                 250                 255

Arg Ile Leu His Asp Phe Thr Lys Lys Val Ile Val Glu Arg Lys Glu
        260                 265                 270

Ala Leu Gln Glu Asn Asp Tyr Lys Met Glu Gly Arg Leu Ala Phe Leu
        275                 280                 285

Asp Leu Leu Leu Glu Met Val Lys Ser Gly Gln Met Asp Glu Thr Asp
    290                 295                 300

Val Gln Ala Glu Val Asp Thr Phe Met Phe Glu Gly His Asp Thr Thr
305                 310                 315                 320

Ser Thr Gly Leu Met Trp Ala Ile His Leu Leu Gly Asn His Pro Glu
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                325                    330                        335
Val Gln Arg Lys Val Gln Ala Glu Leu Asp Glu Val Met Gly Asp Asp
              340                    345                    350
Glu Asp Val Thr Ile Glu His Leu Ser Arg Met Lys Tyr Leu Glu Cys
         355                    360                    365
Ala Leu Lys Glu Ala Leu Arg Leu Phe Pro Ser Val Pro Ile Ile Thr
     370                    375                    380
Arg Glu Leu Ser Asp Asp Gln Val Ile Gly Gly Val Asn Ile Pro Lys
385                    390                    395                    400
Gly Val Thr Phe Leu Leu Asn Leu Tyr Leu Val His Arg Asp Pro Ser
              405                    410                    415
Gln Trp Lys Asp Pro Asp Val Phe Asp Pro Asp Arg Phe Leu Pro Glu
         420                    425                    430
Asn Ser Ile Ala Arg Lys Ser Phe Ala Phe Ile Pro Phe Ser Ala Gly
     435                    440                    445
Ser Arg Asn Cys Ile Gly Gln Arg Phe Ala Leu Met Glu Glu Lys Val
     450                    455                    460
Ile Met Ala His Leu Leu Arg Asn Phe Asn Val Lys Ala Val Glu Leu
465                    470                    475                    480
Met His Glu Val Arg Pro Lys Met Glu Ile Ile Val Arg Pro Val Thr
              485                    490                    495
Pro Ile His Met Lys Leu Thr Arg Arg Arg Pro Ile Val Ser Pro
              500                    505                    510


<210> 105
<211> 467
<212> PRT
<213> Caenorhabditis elegans

<400> 105
Met Gly Val Ile Ile Pro Ala Val Leu Leu Ala Met Ala Thr Val Ile
  1                    5                    10                        15
Ala Trp Leu Leu Tyr Lys His Leu Arg Met Arg Gln Val Leu Lys His
              20                    25                        30
```

Leu Asn Gln Pro Arg Ser Tyr Pro Ile Val Gly His Gly Leu Ile Thr
             35   40   45

Lys Pro Asp Pro Glu Gly Phe Met Asn Gln Val Ile Gly Met Gly Tyr
    50   55   60

Leu Tyr Pro Asp Pro Arg Met Cys Leu Leu Trp Ile Gly Pro Phe Pro
65   70   75   80

Cys Leu Met Leu Tyr Ser Ala Asp Leu Val Glu Pro Ile Phe Ser Ser
                    85   90   95

Thr Lys His Leu Asn Lys Gly Phe Ala Tyr Val Leu Leu Glu Pro Trp
                100   105   110

Leu Gly Ile Ser Ile Leu Thr Ser Gln Lys Glu Gln Trp Arg Pro Lys
            115   120   125

Arg Lys Leu Leu Thr Pro Thr Phe His Tyr Asp Ile Leu Lys Asp Phe
    130   135   140

Leu Pro Ile Phe Asn Glu Gln Ser Lys Ile Leu Val Gln Lys Leu Cys
145   150   155   160

Cys Leu Gly Ala Asp Glu Glu Val Asp Val Leu Ser Val Ile Thr Leu
                165   170   175

Cys Thr Leu Asp Ile Ile Cys Glu Thr Ser Met Gly Lys Ala Ile Gly
            180   185   190

Ala Gln Leu Ala Glu Asn Asn Glu Tyr Val Trp Ala Val His Thr Ile
        195   200   205

Asn Lys Leu Ile Ser Lys Arg Thr Asn Asn Pro Leu Ile Thr Glu Asp
    210   215   220

Gly Arg Thr His Glu Lys Cys Leu Arg Ile Leu His Asp Phe Thr Lys
225   230   235   240

Lys Val Ile Val Glu Arg Lys Glu Ala Leu Gln Glu Asn Asp Tyr Lys
                245   250   255

Met Glu Gly Arg Leu Ala Phe Leu Asp Leu Leu Leu Glu Met Val Lys
        260   265   270

Ser Gly Gln Met Asp Glu Thr Asp Val Gln Ala Glu Val Asp Thr Phe
        275   280   285

162

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Met Phe Glu Gly His Asp Thr Thr Ser Thr Gly Leu Met Trp Ala Ile
290                     295                 300

His Leu Leu Gly Asn His Pro Glu Val Gln Arg Lys Val Gln Ala Glu
305                     310                 315                 320

Leu Asp Glu Val Met Gly Asp Asp Glu Asp Val Thr Ile Glu His Leu
                325                 330                 335

Ser Arg Met Lys Tyr Leu Glu Cys Ala Leu Lys Glu Ala Leu Arg Leu
            340                 345                 350

Phe Pro Ser Val Pro Ile Ile Thr Arg Glu Leu Ser Asp Asp Gln Val
        355                 360                 365

Ile Gly Gly Val Asn Ile Pro Lys Gly Val Thr Phe Leu Leu Asn Leu
    370                 375                 380

Tyr Leu Val His Arg Asp Pro Ala Gln Trp Lys Asp Pro Asp Val Phe
385                 390                 395                 400

Asp Pro Asp Arg Phe Leu Pro Glu Asn Ser Ile Gly Arg Lys Ser Phe
            405                 410                 415

Ala Phe Ile Pro Phe Ser Ala Gly Ser Arg Asn Cys Ile Gly Gln Arg
        420                 425                 430

Phe Ala Leu Met Glu Glu Lys Val Ile Met Ala His Leu Leu Arg Asn
        435                 440                 445

Phe Asn Ile Lys Ala Val Glu Leu Met His Glu Val Arg Ile Gly Asn
    450                 455                 460

Thr Ala Asp
465


<210> 106
<211> 278
<212> PRT
<213> Caenorhabditis elegans

<400> 106
Met Gly Val Ile Ile Pro Ala Val Leu Leu Ala Ser Ala Thr Val Ile
1                   5                   10                  15

Ala Trp Leu Ile Tyr Lys His Leu Arg Met Arg Gln Val Leu Lys His
            20                  25                  30
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Leu Asn Gln Pro Arg Ser Tyr Pro Ile Val Gly His Gly Leu Ile Thr
         35                    40                    45

Lys Pro Asp Pro Glu Gly Phe Met Asn Gln Val Ile Gly Met Gly Tyr
    50                    55                    60

Leu Tyr Pro Asp Pro Arg Met Cys Leu Leu Trp Ile Gly Pro Phe Pro
65                    70                    75                    80

Cys Leu Met Leu Tyr Ser Ala Asp Leu Val Glu Pro Ile Phe Ser Ser
                   85                    90                    95

Thr Lys His Leu Asn Lys Gly Phe Ala Tyr Val Leu Leu Glu Pro Trp
              100                   105                   110

Leu Gly Ile Ser Ile Leu Thr Ser Gln Lys Glu Gln Trp Arg Pro Lys
         115                   120                   125

Arg Lys Leu Leu Thr Pro Thr Phe His Tyr Asp Ile Leu Lys Asp Phe
    130                   135                   140

Leu Pro Ile Phe Asn Glu Gln Ser Lys Ile Leu Ile Gln Lys Leu Cys
145                   150                   155                   160

Cys Leu Gly Val Ala Asp Glu Glu Val Asp Val Leu Ser Val Ile Thr
              165                   170                   175

Leu Cys Thr Leu Asp Ile Ile Cys Glu Thr Ser Met Gly Lys Ala Ile
              180                   185                   190

Gly Ala Gln Leu Ala Glu Asn Asn Glu Tyr Val Trp Ala Val His Thr
         195                   200                   205

Ile Asn Lys Leu Ile Ser Lys Arg Thr Asn Asn Pro Leu Met Trp Asn
    210                   215                   220

Ser Phe Ile Tyr Asn Leu Thr Glu Asp Gly Arg Thr His Glu Lys Cys
225                   230                   235                   240

Leu His Ile Leu His Asp Phe Thr Lys Lys Val Arg Pro Lys Met Glu
              245                   250                   255

Ile Ile Val Arg Pro Val Thr Pro Ile His Met Lys Leu Thr Arg Arg
              260                   265                   270

Arg Pro Ile Val Ser Pro
         275
```

<210> 107
<211> 501
<212> PRT
<213> Coptotermes formosanus

<400> 107
Met Leu Leu Val Ala Leu Gly Leu Leu Leu Ala Cys Leu Leu Ala Val
1   5   10   15

Leu Phe Leu Asn Asp Phe Lys Thr Arg Ser Arg Met Gln Leu Ala Asp
            20   25   30

Lys Ile Pro Gly Pro Lys Ala Leu Pro Val Leu Gly Asn Leu Leu Asp
        35   40   45

Phe Gly Leu Arg Pro Asp Arg Tyr Arg Glu Leu Val Glu Gly Leu Ile
    50   55   60

Tyr Lys His Gly Thr Ile Val Arg Leu Trp Ser Gly Ala Tyr Leu Ile
65   70   75   80

Val Ile Leu Thr Glu Ala Lys Tyr Val Glu Ala Leu Leu Ser Ser Thr
            85   90   95

Ser Gln Ile Asp Lys Ala Tyr Thr Tyr Arg Phe Val Trp Pro Trp Leu
            100   105   110

Gly Ser Gly Leu Leu Thr Ser Thr Gly Gln Ala Leu Gly Asn Pro Pro
        115   120   125

Gln Ala Ala Asp Ser Ser Phe Pro Leu Gln Gly Thr Arg Glu Phe Arg
    130   135   140

Gly Cys Val Gln Gln Lys Trp Lys Ile Leu Val Glu Lys Phe Ser Arg
145   150   155   160

His Val Asn Gly Pro Glu Phe Asp Val Thr Pro Tyr Met Thr Leu Cys
            165   170   175

Ala Leu Asp Asn Met Ser Glu Thr Ser Met Gly Val Thr Leu Asn Ala
        180   185   190

Gln Lys Asp Ser Asp Ser Glu Tyr Val Arg Ala Ile His Ser Leu Gly
    195   200   205

Glu Ile Val Phe Thr Arg Ser Gly Lys Pro Trp Tyr His Ser Asp Thr

                            165

Thr Phe Arg Leu Ser Thr Leu Gly Arg Glu Gln Gln Lys Asn Leu Ala
225 230 235 240

Ile Leu His Ser Phe Thr Arg Ser Val Ile Arg Ser Arg Lys Gln Glu
245 250 255

Leu Leu Val His Leu Asn Asn Gln Ser Gly Glu Gly Val Gln Asn Glu
260 265 270

Leu Gly Leu Lys Arg Arg His Ala Phe Leu Asp Leu Met Leu Gln Ala
275 280 285

Ser Gln Asp Gly Ala Ser Leu Thr Asp Glu Glu Ile Arg Glu Glu Val
290 295 300

Asp Thr Phe Met Phe Glu Gly His Asp Thr Thr Thr Ser Ala Leu Ser
305 310 315 320

Phe Thr Met Trp Cys Leu Ala Lys Tyr Gln Asp Val Gln Glu Lys Ala
325 330 335

Val Val Glu Leu Lys Gln Ile Phe Gly Asp Ser Thr Arg Asp Ala Thr
340 345 350

Phe Arg Asp Leu Gln Glu Met Lys Tyr Leu Glu Gln Val Ile Lys Glu
355 360 365

Thr Leu Arg Leu Tyr Pro Ser Val Asn Cys Phe Gly Arg Gln Leu Thr
370 375 380

Glu Asn Phe Thr Val Gly Asp Tyr Val Asn Pro Ala Gly Ala Asn Val
385 390 395 400

Trp Ile Tyr Pro Tyr His Leu His Arg Arg Pro Glu Tyr Phe Pro Asp
405 410 415

Pro Glu Arg Phe Asp Pro Asp Arg Phe Leu Pro Glu Asn Cys Val Gly
420 425 430

Arg His Pro Tyr Cys Tyr Val Pro Phe Ser Ala Gly Pro Arg Asn Cys
435 440 445

Ile Gly Gln Lys Phe Ala Ile Leu Glu Leu Lys Ser Thr Ile Ser Gln
450 455 460

Val Leu Arg Ser Phe Lys Val Ile Glu Ser Asp Cys Asn Gly Asn Ile

Asp Val Lys Gly Ala Thr Arg Pro Ser Ser Leu Thr Ala Ala Met Ser
180   185   190

Val Cys His Gly Glu Glu Ala Val Cys Ser Ala Gly Ala Thr Pro Ser
195   200   205

Met Gly Leu Ala Asn Ile Ser Val Leu Phe Gly Phe Ile Asn Phe Phe
210   215   220

Leu Trp Ala Gly Asn Cys Trp Phe Val Phe Lys Glu Thr Pro Trp His
225   230   235   240

Gly Gln Gly Gln Asp Gln Gly Gln Gly Pro Ser Gln Glu Ser Ala Ala
245   250   255

Glu Gln Gly Ala Val Glu Lys Gln
260

<210> 109
<211> 264
<212> PRT
<213> Mus musculus

<400> 109
Met Ser Ser Thr Glu Ser Pro Gly Arg Thr Ser Asp Lys Ser Pro Arg
1   5   10   15

Gln Gln Val Asp Arg Leu Leu Leu Gly Leu Arg Trp Gln Arg Leu Glu
20   25   30

Glu Pro Leu Gly Phe Ile Lys Val Leu Gln Trp Leu Phe Ala Ile Phe
35   40   45

Ala Phe Gly Ser Cys Gly Ser Tyr Ser Gly Glu Thr Gly Ala Leu Val
50   55   60

Leu Cys Asn Asn Glu Ala Lys Asp Val Ser Ser Ile Ile Val Leu Phe
65   70   75   80

Gly Tyr Pro Phe Arg Leu Tyr Gln Val Gln Tyr Glu Met Pro Leu Cys
85   90   95

Asp Gln Asp Ser Thr Ser Lys Thr Met Asn Leu Met Gly Asp Phe Ser
100   105   110

Ala Pro Ala Glu Phe Phe Val Thr Leu Gly Ile Phe Ser Phe Phe Tyr
115   120   125

168

Thr Met Ala Ala Leu Val Ile Tyr Leu Arg Phe His Lys Leu Tyr Thr
130   135   140

Glu Asn Lys Arg Phe Pro Leu Val Asp Phe Cys Val Thr Val Ser Phe
145   150   155   160

Thr Phe Phe Trp Leu Val Ala Ala Ala Ala Trp Gly Lys Gly Leu Thr
                165   170   175

Asp Val Lys Gly Ala Thr Arg Pro Ser Ser Leu Thr Ala Ala Met Ser
            180   185   190

Val Cys His Gly Glu Glu Ala Val Cys Ser Ala Gly Ala Thr Pro Ser
        195   200   205

Met Gly Leu Ala Asn Leu Ser Val Leu Phe Gly Phe Ile Asn Phe Phe
    210   215   220

Leu Trp Ala Gly Asn Cys Trp Phe Val Phe Lys Glu Thr Pro Trp His
225   230   235   240

Gly Gln Gly Gln Asp Gln Gly Gln Gly Pro Ser Gln Glu Ser Ala Ala
                245   250   255

Glu Gln Gly Ala Val Glu Lys Gln
            260

<210> 110
<211> 268
<212> PRT
<213> Gallus gallus

<400> 110
Met Cys Met Val Ile Phe Ala Pro Leu Phe Ala Ile Phe Ala Phe Ala
1   5   10   15

Thr Cys Gly Gly Tyr Ser Gly Gly Leu Arg Leu Ser Val Asp Cys Ala
            20   25   30

Asn Lys Ser Glu Ser Asp Leu Asn Ile Asp Ile Ala Phe Ala Tyr Pro
        35   40   45

Phe Arg Leu His Gln Val Asn Phe Asp Ala Pro Thr Cys Glu Gly Lys
    50   55   60

Arg Arg Glu Thr Leu Ser Leu Ile Gly Asp Phe Ser Ser Ser Ala Glu

169

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         65                    70                    75                    80

Phe Phe Val Thr Ile Ala Val Phe Ala Phe Leu Tyr Ser Leu Ala Ala
                    85                    90                    95

Thr Val Val Tyr Ile Phe Phe Gln Asn Lys Tyr Arg Glu Asn Asn Arg
                   100                   105                   110

Gly Pro Leu Ile Asp Phe Ile Val Thr Val Val Phe Ser Phe Leu Trp
              115                   120                   125

Leu Val Gly Ser Ser Ala Trp Ala Lys Gly Leu Ser Asp Val Lys Ile
              130                   135                   140

Ala Thr Asp Pro Asp Glu Val Leu Leu Leu Met Ser Ala Cys Lys Gln
145                   150                   155                   160

Gln Ser Asn Lys Cys Leu Pro Val Arg Ser Pro Val Met Ser Ser Leu
                   165                   170                   175

Asn Thr Ser Val Val Phe Gly Phe Leu Asn Phe Ile Leu Trp Ala Gly
              180                   185                   190

Asn Ile Trp Phe Val Phe Lys Glu Thr Gly Trp His Ser Ser Gly Gln
              195                   200                   205

Arg His Ala Ala Asp Thr Met Glu Lys Gln Ser Ser Gly Tyr Asn Gln
              210                   215                   220

Gly Gly Tyr Asn Gln Asp Ser Tyr Gly Pro Ala Gly Gly Tyr Asn Gln
225                   230                   235                   240

Pro Gly Ser Tyr Gly Gln Val Gly Asp Tyr Gly Gln Pro Gln Ser Tyr
                   245                   250                   255

Gly Gln Ser Gly Pro Thr Ser Phe Ala Asn Gln Ile
              260                   265


<210> 111
<211> 285
<212> PRT
<213> Mus musculus

<400> 111
Met Asp Pro Val Ser Gln Val Ala Ser Ala Gly Thr Phe Arg Ala Leu
  1                 5                    10                   15
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Lys Glu Pro Leu Ala Phe Leu Arg Ala Leu Glu Leu Leu Phe Ala Met
                20   25   30

Phe Ala Phe Ala Thr Cys Gly Gly Tyr Ser Gly Gly Leu Arg Leu Ser
            35   40   45

Val Asp Cys Val Asn Lys Thr Glu Ser Asn Leu Ser Ile Asp Ile Ala
        50   55   60

Phe Ala Tyr Pro Phe Arg Leu Gln Gln Val Thr Phe Glu Val Pro Thr
65   70   75   80

Cys Glu Gly Lys Glu Gln Gln Lys Leu Ala Leu Val Gly Asp Ser Ser
                85   90   95

Ser Ser Ala Glu Phe Phe Val Thr Val Ala Val Phe Ala Phe Leu Tyr
            100   105   110

Ser Leu Ala Ala Thr Val Val Tyr Ile Phe Phe Gln Asn Lys Tyr Arg
        115   120   125

Glu Asn Asn Arg Gly Pro Leu Ile Asp Phe Ile Val Thr Val Val Phe
    130   135   140

Ser Phe Leu Trp Leu Val Gly Ser Ser Ala Trp Ala Lys Gly Leu Ser
145   150   155   160

Asp Val Lys Val Ala Thr Asp Pro Lys Glu Val Leu Leu Leu Met Ser
                165   170   175

Ala Cys Lys Gln Pro Ser Asn Lys Cys Met Ala Val His Ser Pro Val
            180   185   190

Met Ser Ser Leu Asn Thr Ser Val Val Phe Gly Phe Leu Asn Phe Ile
        195   200   205

Leu Trp Ala Gly Asn Ile Trp Phe Val Phe Lys Glu Thr Gly Trp His
    210   215   220

Ser Ser Gly Gln Arg Tyr Leu Ser Asp Pro Met Glu Lys His Ser Ser
225   230   235   240

Ser Tyr Asn Gln Gly Arg Tyr Asn Gln Glu Ser Tyr Gly Ser Ser Gly
            245   250   255

Gly Tyr Ser Gln Gln Ala Asn Leu Gly Pro Thr Ser Asp Glu Phe Gly
        260   265   270

171

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Gln Gln Pro Ser Gly Pro Thr Ser Phe Asn Asn Gln Ile
        275                 280                 285


<210> 112
<211> 265
<212> PRT
<213> Rattus norvegicus

<400> 112
Met Cys Met Val Ile Phe Ala Pro Leu Phe Ala Ile Phe Ala Phe Ala
 1               5                   10                  15

Thr Cys Gly Gly Tyr Ser Gly Gly Leu Arg Leu Ser Val Asp Cys Val
            20                  25                  30

Asn Lys Thr Glu Ser Asn Leu Ser Ile Asp Ile Ala Phe Ala Tyr Pro
        35                  40                  45

Phe Arg Leu His Gln Val Thr Phe Glu Val Pro Thr Cys Glu Gly Lys
    50                  55                  60

Glu Arg Gln Lys Leu Ala Leu Val Gly Asp Ser Ser Ser Ser Ala Glu
65                  70                  75                  80

Phe Phe Val Thr Val Ala Val Phe Ala Phe Leu Tyr Ser Leu Ala Ala
                85                  90                  95

Thr Val Val Tyr Ile Phe Phe Gln Asn Lys Tyr Arg Glu Asn Asn Arg
            100                 105                 110

Gly Pro Leu Ile Asp Phe Ile Val Thr Val Val Phe Ser Phe Leu Trp
        115                 120                 125

Leu Val Gly Ser Ser Ala Trp Ala Lys Gly Leu Ser Asp Val Lys Val
    130                 135                 140

Ala Thr Asp Pro Lys Glu Val Leu Leu Leu Met Ser Ala Cys Lys Gln
145                 150                 155                 160

Pro Ser Asn Lys Cys Met Ala Val His Ser Pro Val Met Ser Ser Leu
            165                 170                 175

Asn Thr Ser Val Val Phe Gly Phe Leu Asn Phe Ile Leu Trp Ala Gly
            180                 185                 190

Asn Ile Trp Phe Val Phe Lys Glu Thr Gly Trp His Ser Ser Gly Gln
        195                 200                 205
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172

Arg Tyr Leu Ser Asp Pro Met Glu Lys His Ser Ser Ser Tyr Asn Gln
    210   215   220

Gly Gly Tyr Asn Gln Asp Ser Tyr Gly Ser Ser Gly Gly Tyr Ser Gln
225   230   235   240

Gln Ala Ser Leu Gly Pro Thr Ser Asp Glu Phe Gly Gln Gln Pro Ser
                245   250   255

Gly Pro Thr Ser Phe Asn Asn Gln Ile
            260   265

<210> 113
<211> 703
<212> PRT
<213> Mus musculus

<400> 113
Met Ala Ala Leu Ala Ala Gly Ile Ser Lys Gln Arg Ala Ala Ala Gln
  1   5   10   15

Gly Leu Gly Ser Asn Gln Asn Ala Val Lys Tyr Leu Gly Gln Asp Phe
              20   25   30

Glu Thr Leu Arg Lys Gln Cys Leu Asn Ser Gly Val Leu Phe Lys Asp
          35   40   45

Pro Glu Phe Pro Ala Cys Pro Ser Ala Leu Gly Tyr Arg Asp Leu Gly
      50   55   60

Pro Gly Ser Ala Glu Thr Gln Gly Ile Ile Trp Lys Arg Pro Thr Glu
65   70   75   80

Leu Cys Ser Asn Pro Gln Phe Ile Val Gly Gly Ala Thr Arg Thr Asp
              85   90   95

Ile Arg Gln Gly Gly Leu Gly Asp Cys Trp Leu Leu Ala Ala Ile Ala
              100   105   110

Ser Leu Thr Leu Asn Glu Lys Leu Leu Tyr Arg Val Val Pro Arg Asp
          115   120   125

Gln Ser Phe Gln Lys Asn Tyr Ala Gly Ile Phe His Phe Gln Phe Trp
      130   135   140

Gln Tyr Gly Glu Trp Val Glu Val Val Ile Asp Asp Arg Leu Pro Thr

173

145   150   155   160

Lys Asn Gly Gln Leu Leu Phe Leu His Ser Glu Glu Gly Asn Glu Phe
                              165   170   175

Trp Ser Ala Leu Leu Glu Lys Ala Tyr Ala Lys Leu Asn Gly Ser Tyr
              180   185   190

Glu Ala Leu Ala Gly Gly Ser Thr Ile Glu Gly Phe Glu Asp Phe Thr
        195   200   205

Gly Gly Ile Ser Glu Phe Tyr Asp Leu Arg Lys Pro Pro Gly Asn Leu
      210   215   220

Tyr Tyr Thr Ile Gln Lys Ala Leu Arg Lys Gly Ser Leu Leu Gly Cys
225   230   235   240

Ser Ile Asp Val Ser Asn Ala Ala Glu Ala Glu Ala Thr Thr Arg Gln
                      245   250   255

Lys Leu Val Lys Gly His Ala Tyr Ser Val Thr Gly Val Glu Glu Val
                      260   265   270

Asp Phe Arg Gly Leu Pro Glu Lys Leu Ile Arg Leu Arg Asn Pro Trp
        275   280   285

Gly Glu Val Glu Trp Thr Gly Ala Trp Ser Asp Ser Ala Pro Glu Trp
      290   295   300

Asn Tyr Ile Asp Pro Gln Lys Lys Gly Glu Leu Asp Lys Arg Ala Glu
305   310   315   320

Asp Gly Glu Phe Trp Met Ser Phe Ser Asp Phe Leu Lys Gln Phe Ser
                      325   330   335

Arg Leu Glu Ile Cys Asn Leu Ser Pro Asp Ser Leu Ser Ser Glu Glu
              340   345   350

Ile His Lys Trp Asn Leu Val Leu Phe Asn Gly Arg Trp Thr Arg Gly
              355   360   365

Ser Thr Ala Gly Gly Cys Gln Asn Tyr Pro Ala Thr Tyr Trp Thr Asn
        370   375   380

Pro Gln Phe Lys Ile His Leu Asp Glu Val Asp Glu Asp Gln Glu Glu
385   390   395   400

Gly Thr Ser Glu Pro Cys Cys Thr Val Leu Leu Gly Leu Met Gln Lys

                                    174

405   410   415

Asn Arg Arg Arg Gln Arg Arg Ile Gly Gln Gly Met Leu Ser Ile Gly
                    420   425   430

Tyr Ala Val Tyr Gln Ile Pro Lys Glu Leu Glu Asn His Thr Asp Glu
        435   440   445

His Leu Gly Arg Asp Phe Phe Gln Gly Arg Gln Pro Ser Thr Cys Ser
     450   455   460

Ser Thr Tyr Met Asn Leu Arg Glu Val Ser Ser Arg Val Gln Leu Pro
465   470   475   480

Pro Gly Gln Tyr Leu Val Val Pro Ser Thr Phe Glu Pro Phe Lys Asp
                    485   490   495

Gly Asp Phe Cys Leu Arg Val Phe Ser Glu Lys Lys Ala Gln Ala Leu
              500   505   510

Glu Ile Gly Asp Ala Val Pro Gly Asp Pro His Glu Pro His Pro Arg
        515   520   525

Asp Met Asp Gly Glu Asp Glu His Phe Trp Ser Leu Ser Glu Glu Phe
        530   535   540

Ala Asp Lys Asp Ser Glu Ile Ser Ala His Gln Leu Lys Arg Val Leu
        545   550   555   560

Asn Gly Leu Leu Ser Lys Arg Thr Asp Met Lys Phe Asp Gly Phe Asn
                    565   570   575

Ile Asn Thr Cys Arg Glu Met Ile Ser Leu Leu Asp Gly Asp Gly Thr
              580   585   590

Gly Ser Leu Arg Pro Val Glu Phe Lys Thr Leu Trp Leu Lys Ile Cys
        595   600   605

Lys Tyr Leu Glu Ile Tyr Gln Glu Met Asp His Ser Arg Ala Gly Thr
     610   615   620

Ile Asp Ala His Glu Met Arg Thr Ala Leu Lys Lys Ala Gly Phe Thr
625   630   635   640

Leu Asn Asn Gln Val Gln Gln Thr Ile Ala Thr Arg Tyr Ala Cys Ser
                    645   650   655

Lys Leu Gly Val Asp Phe Asp Gly Phe Val Ala Cys Met Ile Arg Leu

                              175

                                                    670
                    665
        660
Glu Ile Leu Phe Lys Leu Phe Arg Leu Leu Asp Lys Asp Gln Asn Gly
    675   680   685

Ile Val Gln Leu Ser Leu Ala Glu Trp Leu Cys Arg Ala Leu Val
    690   695   700

<210> 114
<211> 702
<212> PRT
<213> Xenopus laevis

<400> 114
Met Ser Arg Ser Ala Ala Val Ile Ala Lys Asp Arg Thr Leu Ala Asp
  1   5   10   15

 Gly Gly Gly Thr Lys Arg Asn Pro Glu Lys Tyr Leu Asp Gln Glu Phe
            20   25   30

 Glu Lys Leu Arg Ala Gln Cys Leu Ala Ser Gly Ala Leu Tyr Lys Asp
        35   40   45

 Glu Glu Phe Pro Ala Cys Pro Ser Ala Leu Gly Tyr Asn Glu Leu Arg
     50   55   60

 Pro Gly Ser Tyr Lys Thr Ser Gly Val Ile Trp Lys Arg Pro Thr Glu
 65   70   75   80

 Ile Cys Pro Asn Pro Gln Phe Ile Val Asp Gly Ala Thr Arg Gly Asp
                85   90   95

 Ile Arg Gln Gly Ala Leu Gly Asp Cys Trp Leu Leu Ala Ala Ile Ala
            100   105   110

 Ser Leu Thr Leu Glu Pro Asp Leu Val Ala Gln Val Val Pro Glu Asn
        115   120   125

 Gln Ser Phe Gln Lys Asn Tyr Ala Gly Ile Phe His Phe Arg Phe Trp
     130   135   140

 Gln Tyr Gly Glu Trp Val Asp Val Val Val Asp Asp Arg Leu Pro Thr
 145   150   155   160

 Lys Asn Gly Lys Leu Val Phe Val His Ser Ala Glu Gly Asp Glu Phe
                165   170   175

                        176

Trp Ser Ala Leu Leu Glu Lys Ala Tyr Ala Lys Leu Asn Gly Ser Tyr
            180   185   190

Glu Ala Leu Thr Gly Gly Ser Thr Ile Glu Gly Phe Glu Asp Phe Thr
        195   200   205

Gly Gly Ile Ala Glu Val Tyr Glu Leu Lys Lys Ala Pro Pro Asn Leu
    210   215   220

Phe Gln Ile Ile Gln Lys Ala Leu Lys Ala Glu Ser Leu Leu Gly Cys
225   230   235   240

Ser Ile Asp Ile Thr Asn Ala Tyr Asp Thr Glu Ala Ile Thr Ser Arg
            245   250   255

Lys Leu Val Lys Gly His Ala Tyr Ser Val Thr Gly Ala Glu Glu Val
        260   265   270

Leu Tyr Arg Gly Arg Gln Glu Lys Leu Ile Arg Val Arg Asn Pro Trp
    275   280   285

Gly Glu Val Glu Trp Thr Gly Pro Trp Ser Asp Glu Ala Pro Glu Trp
    290   295   300

Asn Tyr Val Asp Pro Lys Val Lys Ala Val Leu Asp Lys Lys Ser Glu
305   310   315   320

Asp Gly Glu Phe Trp Met Ala Phe Ser Asp Phe Leu Arg Glu Tyr Ser
            325   330   335

Arg Leu Glu Ile Cys Asn Leu Ser Pro Asp Thr Leu Thr Ser Asn His
        340   345   350

Gln His Lys Trp Asn Ile Thr Leu Tyr Thr Gly Ser Trp Ala Arg Gly
        355   360   365

Ser Thr Ala Gly Gly Cys Gln Asn Tyr Pro Ala Thr Phe Trp Thr Asn
    370   375   380

Pro Gln Phe Arg Ile Lys Leu Asp Glu Pro Asp Asp Asp His Gln Gly
385   390   395   400

Thr Asn Asn Glu Pro Cys Cys Thr Val Ile Val Gly Leu Met Gln Lys
            405   410   415

Asn Arg Arg Arg Lys Lys Lys Met Gly Glu Asp Leu Leu Ser Ile Gly
        420   425   430

177

Tyr Ser Leu Phe Lys Ile Pro Asp Gln Leu Gln Asp His Thr Asp Ala
        435   440   445

His Leu Gly Arg Asp Phe Leu Gln Lys Thr Pro Thr Ala Ala Arg Ser
    450   455   460

Asp Thr Tyr Ile Asn Val Arg Glu Val Ser Asn Arg Phe His Leu Pro
465   470   475   480

Val Gly Asp Tyr Leu Ile Val Pro Ser Thr Phe Glu Pro Phe Lys Asn
                485   490   495

Gly Asp Phe Cys Leu Arg Val Phe Ser Glu Lys Glu Ala Lys Ser Leu
            500   505   510

Glu Val Gly Asp Val Val Ile Ala Lys Pro Tyr Glu Pro Gln Ile Ser
        515   520   525

Asn Lys Asp Val Pro Asp Asp Phe Lys Asn Ile Phe Asp Lys Leu Ala
    530   535   540

Gly Asp Lys Glu Glu Val Asp Ala Arg Glu Leu Gln Thr Ile Leu Asn
545   550   555   560

Lys Leu Ile Ser Lys Arg Pro Asp Leu Arg Ser Asn Gly Phe Thr Leu
                565   570   575

Asn Thr Cys Arg Glu Met Ile Ser Leu Gln Asp Met Asp Gly Thr Ala
            580   585   590

Thr Leu Ser Leu Leu Glu Phe Arg Ile Leu Trp Met Lys Ile Gln Lys
        595   600   605

Tyr Leu Ala Ile Tyr Leu Lys Ala Asp Ser Asp Arg Ser Gly Ile Met
    610   615   620

Asp Ser His Glu Leu Arg Thr Ala Leu Gln Glu Ala Gly Phe Thr Leu
625   630   635   640

Asn Asn Lys Ile His Glu Ser Ile Val Gln Arg Tyr Ala Ser Asn Asp
                645   650   655

Leu Ala Leu Asn Phe Asp Gly Phe Ile Ala Cys Met Met Arg Leu Glu
            660   665   670

Thr Leu Phe Lys Met Phe Gln Met Leu Asp Lys Ser Lys Arg Gly Val
        675   680   685

178

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Val Glu Leu Ser Leu Gln Glu Trp Leu Cys Ala Thr Leu Val
    690                 695                 700


<210> 115
<211> 703
<212> PRT
<213> Rattus norvegicus

<400> 115
Met Ala Ala Leu Ala Ala Gly Val Ser Lys Gln Arg Ala Val Ala Glu
  1                 5                   10                  15

Gly Leu Gly Ser Asn Gln Asn Ala Val Lys Tyr Leu Gly Gln Asp Phe
                20                  25                  30

Glu Thr Leu Arg Lys Gln Cys Leu Asn Ser Gly Val Leu Phe Lys Asp
            35                  40                  45

Pro Glu Phe Pro Ala Cys Pro Ser Ala Leu Gly Tyr Lys Asp Leu Gly
        50                  55                  60

Pro Gly Ser Pro Asp Thr Gln Gly Ile Val Trp Lys Arg Pro Thr Glu
 65                 70                  75                  80

Leu Cys Pro Asn Pro Gln Phe Ile Val Gly Gly Ala Thr Arg Thr Asp
                85                  90                  95

Ile Arg Gln Gly Gly Leu Gly Asp Cys Trp Leu Leu Ala Ala Ile Ala
            100                 105                 110

Ser Leu Thr Leu Asn Glu Lys Leu Leu Tyr Arg Val Leu Pro Arg Asp
        115                 120                 125

Gln Ser Phe Gln Lys Asp Tyr Ala Gly Ile Phe His Phe Gln Phe Trp
    130                 135                 140

Gln Tyr Gly Glu Trp Val Glu Val Val Ile Asp Asp Arg Leu Pro Thr
145                 150                 155                 160

Lys Asn Gly Gln Leu Leu Phe Leu His Ser Glu Glu Gly Asn Glu Phe
                165                 170                 175

Trp Ser Ala Leu Leu Glu Lys Ala Tyr Ala Lys Leu Asn Gly Ser Tyr
                180                 185                 190

Glu Ala Leu Val Gly Gly Ser Thr Ile Glu Gly Phe Glu Asp Phe Thr
        195                 200                 205

                          179
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Gly Gly Ile Ser Glu Phe Tyr Asp Leu Lys Lys Pro Pro Glu Asn Leu
    210   215   220

Tyr Tyr Ile Ile Gln Lys Ala Leu Arg Lys Gly Ser Leu Leu Gly Cys
225   230   235   240

Ser Ile Asp Val Ser Thr Ala Ala Glu Ala Glu Ala Thr Thr Arg Gln
                245   250   255

Lys Leu Val Lys Gly His Ala Tyr Ser Val Thr Gly Val Glu Glu Val
            260   265   270

Asn Phe His Gly Arg Pro Glu Lys Leu Ile Arg Leu Arg Asn Pro Trp
        275   280   285

Gly Glu Val Glu Trp Ser Gly Ala Trp Ser Asp Asn Ala Pro Glu Trp
    290   295   300

Asn Tyr Ile Asp Pro Arg Arg Lys Glu Glu Leu Asp Lys Lys Ala Glu
305   310   315   320

Asp Gly Glu Phe Trp Met Ser Phe Ser Asp Phe Leu Lys Gln Tyr Ser
                325   330   335

Arg Leu Glu Ile Cys Asn Leu Ser Pro Asp Ser Leu Ser Ser Glu Glu
            340   345   350

Ile His Lys Trp Asn Leu Val Leu Phe Asn Gly Arg Trp Thr Arg Gly
        355   360   365

Ser Thr Ala Gly Gly Cys Leu Asn Tyr Pro Gly Thr Tyr Trp Thr Asn
    370   375   380

Pro Gln Phe Lys Ile His Leu Asp Glu Val Asp Glu Asp Gln Glu Glu
385   390   395   400

Gly Thr Ser Glu Pro Cys Cys Thr Val Leu Leu Gly Leu Met Gln Lys
                405   410   415

Asn Arg Arg Arg Gln Lys Arg Ile Gly Gln Gly Met Leu Ser Ile Gly
            420   425   430

Tyr Ala Val Tyr Gln Ile Pro Lys Glu Leu Glu Ser His Thr Asp Ala
        435   440   445

His Leu Gly Arg Asp Phe Phe Leu Gly Arg Gln Pro Ser Thr Cys Ser
    450   455   460

180

Ser Thr Tyr Met Asn Leu Arg Glu Val Ser Ser Arg Val Arg Leu Pro
465   470   475   480

Pro Gly Gln Tyr Leu Val Val Pro Ser Thr Phe Glu Pro Phe Lys Asp
                485   490   495

Gly Asp Phe Cys Leu Arg Val Phe Ser Glu Lys Lys Ala Lys Ala Leu
            500   505   510

Glu Ile Gly Asp Thr Val Ser Gly His Pro His Glu Pro His Pro Arg
        515   520   525

Asp Met Asp Glu Glu Asp Glu His Val Arg Ser Leu Phe Glu Glu Phe
    530   535   540

Val Gly Lys Asp Ser Glu Ile Ser Ala Asn Gln Leu Lys Arg Val Leu
545   550   555   560

Asn Glu Val Leu Ser Lys Arg Thr Asp Met Lys Phe Asp Gly Phe Asn
                565   570   575

Ile Asn Thr Cys Arg Glu Met Ile Ser Leu Leu Asp Ser Asp Gly Thr
            580   585   590

Gly Ser Leu Gly Pro Met Glu Phe Lys Thr Leu Trp Leu Lys Ile Arg
        595   600   605

Thr Tyr Leu Glu Ile Phe Gln Glu Met Asp His Asn His Val Gly Thr
    610   615   620

Ile Glu Ala His Glu Met Arg Thr Ala Leu Lys Lys Ala Gly Phe Thr
625   630   635   640

Leu Asn Asn Gln Val Gln Gln Thr Ile Ala Met Arg Tyr Ala Cys Ser
                645   650   655

Lys Leu Gly Val Asp Phe Asn Gly Phe Val Ala Cys Met Ile Arg Leu
            660   665   670

Glu Thr Leu Phe Lys Leu Phe Arg Leu Leu Asp Lys Asp Gln Asn Gly
        675   680   685

Ile Val Gln Leu Ser Leu Ala Glu Trp Leu Cys Cys Val Leu Val
    690   695   700

<210> 116

<211> 703
<212> PRT
<213> Rattus norvegicus

<400> 116
Met Ala Ala Leu Ala Ala Gly Val Ser Lys Gln Arg Ala Val Ala Glu
1   5   10   15

Gly Leu Gly Ser Asn Gln Asn Ala Val Lys Tyr Leu Gly Gln Asp Phe
            20   25   30

Glu Thr Leu Arg Lys Gln Cys Leu Asn Ser Gly Val Leu Phe Lys Asp
        35   40   45

Pro Glu Phe Pro Ala Cys Pro Ser Ala Leu Gly Tyr Lys Asp Leu Gly
    50   55   60

Pro Gly Ser Pro Asp Thr Gln Gly Ile Val Trp Lys Arg Pro Thr Glu
65   70   75   80

Leu Cys Pro Asn Pro Gln Phe Ile Val Gly Gly Ala Thr Arg Thr Asp
            85   90   95

Ile Arg Gln Gly Gly Leu Val Asp Cys Trp Leu Leu Ala Ala Ile Ala
        100   105   110

Ser Leu Thr Leu Asn Glu Lys Leu Leu Tyr Arg Val Leu Pro Arg Asp
    115   120   125

Gln Ser Phe Gln Lys Asp Tyr Ala Gly Ile Phe His Phe Gln Phe Trp
    130   135   140

Gln Tyr Gly Glu Trp Val Glu Val Val Ile Asp Asp Arg Leu Pro Thr
145   150   155   160

Lys Asn Gly Gln Leu Leu Phe Leu His Ser Glu Glu Gly Asn Glu Phe
            165   170   175

Trp Ser Ala Leu Leu Glu Lys Ala Tyr Ala Lys Leu Asn Gly Ser Tyr
        180   185   190

Glu Ala Leu Val Gly Gly Ser Thr Ile Glu Gly Phe Glu Asp Phe Thr
    195   200   205

Gly Gly Ile Ser Glu Phe Tyr Asp Leu Lys Lys Pro Pro Glu Asn Leu
    210   215   220

Tyr Tyr Ile Ile Gln Lys Ala Leu Arg Lys Gly Ser Leu Leu Gly Cys

                        182

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     225                230                 235                 240

Ser Ile Asp Val Ser Thr Ala Ala Glu Ala Glu Ala Thr Thr Arg Gln
                 245                 250                 255

Lys Leu Val Lys Gly His Ala Tyr Ser Val Thr Gly Val Glu Glu Val
                 260                 265                 270

Asn Phe His Gly Arg Pro Glu Lys Leu Ile Arg Leu Arg Asn Pro Trp
         275                 280                 285

Gly Glu Val Glu Trp Ser Gly Ala Trp Ser Asp Asn Ala Pro Glu Trp
     290                 295                 300

Asn Tyr Ile Asp Pro Arg Arg Lys Glu Glu Leu Asp Lys Lys Ala Glu
305                 310                 315                 320

Asp Gly Glu Phe Trp Met Ser Phe Ser Asp Phe Leu Lys Gln Tyr Ser
                 325                 330                 335

Arg Leu Glu Ile Cys Asn Leu Ser Pro Asp Ser Leu Ser Ser Glu Glu
         340                 345                 350

Ile His Lys Trp Asn Leu Val Leu Phe Asn Gly Arg Trp Thr Arg Gly
         355                 360                 365

Ser Thr Ala Gly Gly Cys Leu Asn Tyr Pro Gly Thr Tyr Trp Thr Asn
     370                 375                 380

Pro Gln Phe Lys Ile His Leu Asp Glu Val Asp Glu Asp Gln Glu Glu
385                 390                 395                 400

Gly Thr Ser Glu Pro Cys Cys Thr Val Leu Leu Gly Leu Met Gln Lys
                 405                 410                 415

Asn Arg Arg Arg Gln Lys Arg Ile Gly Gln Gly Met Leu Ser Ile Gly
         420                 425                 430

Tyr Ala Val Tyr Gln Ile Pro Lys Glu Leu Glu Ser His Thr Asp Ala
         435                 440                 445

His Leu Gly Arg Asp Phe Phe Leu Gly Arg Gln Pro Ser Thr Cys Ser
     450                 455                 460

Ser Thr Tyr Met Asn Leu Arg Glu Val Ser Ser Arg Val Arg Leu Pro
465                 470                 475                 480

Pro Gly Gln Tyr Leu Val Val Pro Ser Thr Phe Glu Pro Phe Lys Asp

                               183
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Gly Asp Phe Cys Leu Arg Val Phe Ser Glu Lys Lys Ala Lys Ala Leu
                               505   510
             500

Glu Ile Gly Asp Thr Val Ser Gly His Pro His Glu Pro His Pro Arg
        515   520   525

Asp Met Asp Glu Glu Asp Glu His Val Arg Ser Leu Phe Glu Glu Phe
    530   535   540

Val Gly Lys Asp Ser Glu Ile Ser Ala Asn Gln Leu Lys Arg Val Leu
545   550   555   560

Asn Glu Val Leu Ser Lys Arg Thr Asp Met Lys Phe Asp Gly Phe Asn
                  565   570   575

Ile Asn Thr Cys Arg Glu Met Ile Ser Leu Leu Asp Ser Asp Gly Thr
             580   585   590

Gly Ser Leu Gly Pro Met Glu Phe Lys Thr Leu Trp Leu Lys Ile Arg
        595   600   605

Thr Tyr Leu Glu Ile Phe Gln Glu Met Asp His Asn His Val Gly Thr
    610   615   620

Ile Glu Ala His Glu Met Arg Thr Ala Leu Lys Lys Ala Gly Phe Thr
625   630   635   640

Leu Asn Asn Gln Val Gln Gln Thr Ile Ala Met Arg Tyr Ala Cys Ser
                  645   650   655

Lys Leu Gly Val Asp Phe Asn Gly Phe Val Ala Cys Met Ile Arg Leu
             660   665   670

Glu Thr Leu Phe Lys Leu Phe Arg Leu Leu Asp Lys Asp Gln Asn Gly
        675   680   685

Ile Val Gln Leu Ser Leu Ala Glu Trp Leu Cys Cys Val Leu Val
    690   695   700

Met Pro Tyr Leu Leu Pro Gly Phe Phe Cys Asp Arg Val Ile Arg Glu
1   5   10   15

Arg Asp Arg Arg Asn Gly Glu Gly Thr Val Ser Gln Pro Leu Lys Phe
                20   25   30

Glu Gly Gln Asp Phe Val Val Leu Lys Gln Arg Cys Leu Ala Gln Lys
            35   40   45

Cys Leu Phe Glu Asp Arg Val Phe Pro Ala Gly Thr Gln Ala Leu Gly
    50   55   60

Ser His Glu Leu Ser Gln Lys Ala Lys Met Lys Ala Ile Thr Trp Lys
65   70   75   80

Arg Pro Lys Glu Ile Cys Glu Asn Pro Arg Phe Ile Ile Gly Gly Ala
                85   90   95

Asn Arg Thr Asp Ile Cys Gln Gly Asp Leu Gly Asp Cys Trp Phe Leu
            100   105   110

Ala Ala Ile Ala Cys Leu Thr Leu Asn Glu Arg Leu Leu Phe Arg Val
        115   120   125

Ile Pro His Asp Gln Ser Phe Thr Glu Asn Tyr Ala Gly Ile Phe His
    130   135   140

Phe Gln Phe Trp Arg Tyr Gly Asp Trp Val Asp Val Val Ile Asp Asp
145   150   155   160

Cys Leu Pro Thr Tyr Asn Asn Gln Leu Val Phe Thr Lys Ser Asn His
                165   170   175

Arg Asn Glu Phe Trp Ser Ala Leu Leu Glu Lys Ala Tyr Ala Lys Leu
            180   185   190

His Gly Ser Tyr Glu Ala Leu Lys Gly Gly Asn Thr Thr Glu Ala Met
        195   200   205

Glu Asp Phe Thr Gly Gly Val Thr Glu Phe Phe Glu Ile Lys Asp Ala
    210   215   220

Pro Ser Asp Met Tyr Lys Ile Met Arg Lys Ala Ile Glu Arg Gly Ser
225   230   235   240

Leu Met Gly Cys Ser Ile Asp Thr Ile Val Pro Val Gln Tyr Glu Thr
                245   250   255

185

Arg Met Ala Cys Gly Leu Val Lys Gly His Ala Tyr Ser Val Thr Gly
260 265 270

Leu Glu Glu Ala Leu Phe Lys Gly Glu Lys Val Lys Leu Val Arg Leu
275 280 285

Arg Asn Pro Trp Gly Gln Val Glu Trp Asn Gly Ser Trp Ser Asp Gly
290 295 300

Trp Lys Asp Trp Ser Phe Val Asp Lys Asp Glu Lys Ala Arg Leu Gln
305 310 315 320

His Gln Val Thr Glu Asp Gly Glu Phe Trp Met Ser Tyr Asp Asp Phe
325 330 335

Val Tyr His Phe Thr Lys Leu Glu Ile Cys Asn Leu Thr Ala Asp Ala
340 345 350

Leu Glu Ser Asp Lys Leu Gln Thr Trp Thr Val Ser Val Asn Glu Gly
355 360 365

Arg Trp Val Arg Gly Cys Ser Ala Gly Gly Cys Arg Asn Phe Pro Asp
370 375 380

Thr Phe Trp Thr Asn Pro Gln Tyr Arg Leu Lys Leu Leu Glu Glu Asp
385 390 395 400

Asp Asp Pro Asp Asp Ser Glu Val Ile Cys Ser Phe Leu Val Ala Leu
405 410 415

Met Gln Lys Asn Arg Arg Lys Asp Arg Lys Leu Gly Ala Asn Leu Phe
420 425 430

Thr Ile Gly Phe Ala Ile Tyr Glu Val Pro Lys Glu Met His Gly Asn
435 440 445

Lys Gln His Leu Gln Lys Asp Phe Phe Leu Tyr Asn Ala Ser Lys Ala
450 455 460

Arg Ser Lys Thr Tyr Ile Asn Met Arg Glu Val Ser Gln Arg Phe Arg
465 470 475 480

Leu Pro Pro Ser Glu Tyr Val Ile Val Pro Ser Thr Tyr Glu Pro His
485 490 495

Gln Glu Gly Glu Phe Ile Leu Arg Val Phe Ser Glu Lys Arg Asn Leu
500 505 510

186

```
Ser Glu Glu Ala Glu Asn Thr Ile Ser Val Asp Arg Pro Val Pro Arg
        515                 520                 525

Pro Gly His Thr Asp Gln Glu Ser Glu Glu Gln Gln Gln Phe Arg Asn
        530                 535                 540

Ile Phe Arg Gln Ile Ala Gly Asp Asp Met Glu Ile Cys Ala Asp Glu
545                 550                 555                 560

Leu Lys Asn Val Leu Asn Thr Val Val Asn Lys His Lys Asp Leu Lys
                565                 570                 575

Thr Gln Gly Phe Thr Leu Glu Ser Cys Arg Ser Met Ile Ala Leu Met
                580                 585                 590

Asp Thr Asp Gly Ser Gly Arg Leu Asn Leu Gln Glu Phe His His Leu
        595                 600                 605

Trp Lys Lys Ile Lys Ala Trp Gln Lys Ile Phe Lys His Tyr Asp Thr
        610                 615                 620

Asp His Ser Gly Thr Ile Asn Ser Tyr Glu Met Arg Asn Ala Val Asn
625                 630                 635                 640

Asp Ala Gly Phe His Leu Asn Ser Gln Leu Tyr Asp Ile Ile Thr Met
                645                 650                 655

Arg Tyr Ala Asp Lys His Met Asn Ile Asp Phe Asp Ser Phe Ile Cys
        660                 665                 670

Cys Phe Val Arg Leu Glu Gly Met Phe Arg Ala Phe His Ala Phe Asp
        675                 680                 685

Lys Asp Gly Asp Gly Ile Ile Lys Leu Asn Val Leu Glu Trp Leu Gln
        690                 695                 700

Leu Thr Met Tyr Ala
705


<210> 118
<211> 297
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Calpain-like
      thiol protease family domain sequence
```

187

<400> 118

Phe Glu Asn Gln Asp Tyr Glu Glu Leu Arg Gln Glu Cys Leu Glu Glu
1   5   10   15

Gly Gly Leu Phe Val Asp Pro Leu Phe Pro Ala Lys Pro Ser Ser Leu
            20   25   30

Phe Phe Ser Gln Leu Gln Arg Lys Phe Val Val Trp Lys Arg Pro His
        35   40   45

Glu Ile Phe Glu Asp Pro Pro Leu Ile Val Gly Gly Ala Ser Arg Thr
    50   55   60

Asp Ile Cys Gln Gly Val Leu Gly Asp Cys Trp Leu Leu Ala Ala Leu
65   70   75   80

Ala Ala Leu Thr Leu Arg Glu Glu Leu Leu Ala Arg Val Ile Pro Lys
            85   90   95

Asp Gln Glu Phe Ser Glu Asn Tyr Ala Gly Ile Tyr His Phe Arg Phe
            100   105   110

Trp Arg Tyr Gly Lys Trp Val Asp Val Val Ile Asp Asp Arg Leu Pro
        115   120   125

Thr Tyr Asn Gly Asp Leu Leu Phe Met His Ser Asn Ser Arg Asn Glu
    130   135   140

Phe Trp Ser Ala Leu Leu Glu Lys Ala Tyr Ala Lys Leu Arg Gly Cys
145   150   155   160

Tyr Glu Ala Leu Lys Gly Gly Ser Thr Thr Glu Ala Leu Glu Asp Leu
            165   170   175

Thr Gly Gly Val Ala Glu Ser Ile Glu Leu Lys Lys Ile Ser Lys Asp
            180   185   190

Pro Asp Glu Leu Phe Lys Asp Leu Lys Lys Ala Phe Glu Arg Gly Ser
        195   200   205

Leu Met Gly Cys Ser Ile Gly Ala Gly Thr Ala Val Glu Glu Glu Glu
    210   215   220

Gln Lys Arg Asn Gly Leu Val Lys Gly His Ala Tyr Ser Val Thr Asp
225   230   235   240

Val Arg Glu Val Asp Gly Arg Arg Arg Gln Lys Leu Leu Arg Leu Arg

188

```
                245                   250                   255
Asn Pro Trp Gly Glu Ser Glu Trp Asn Gly Pro Trp Ser Asp Asp Ser
            260                   265                   270

Pro Glu Trp Arg Ser Val Ser Ala Glu Glu Lys Lys Asn Leu Gly Leu
            275                   280                   285

Thr Met Asp Asp Asp Gly Glu Phe Trp
        290                   295
```

<210> 119
<211> 287
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptidase_C2
        domain sequence

<400> 119
```
Phe Val Asp Pro Ser Phe Pro Ala Ala Pro Lys Ser Leu Gly Tyr Lys
  1               5                   10                  15

Pro Leu Gly Pro Arg Gly Ile Glu Trp Lys Arg Pro His Glu Ile Asn
            20                  25                  30

Glu Asn Pro Gln Phe Ile Val Gly Gly Ala Thr Arg Thr Asp Ile Cys
        35                  40                  45

Gln Gly Ala Leu Gly Asp Cys Trp Leu Leu Ala Ala Leu Ala Ser Leu
    50                  55                  60

Thr Leu Asn Glu Pro Leu Leu Leu Arg Val Val Pro His Asp Gln Ser
 65                  70                  75                  80

Phe Gln Glu Asn Tyr Ala Gly Ile Phe His Phe Arg Phe Trp Gln Phe
                85                  90                  95

Gly Glu Trp Val Asp Val Val Val Asp Asp Leu Leu Pro Thr Lys Asp
            100                 105                 110

Gly Lys Leu Leu Phe Val His Ser Ala Glu Arg Asn Glu Phe Trp Ser
        115                 120                 125

Ala Leu Leu Glu Lys Ala Tyr Ala Lys Leu Asn Gly Cys Tyr Glu Ala
        130                 135                 140
```

                                189

Leu Ser Gly Gly Ser Thr Thr Glu Ala Leu Glu Asp Leu Thr Gly Gly
145   150   155   160

Val Cys Glu Ser Tyr Glu Leu Lys Leu Ala Pro Ser Ser Met Leu Asn
                165   170   175

Leu Gly Asn Ile Ile Lys Lys Met Leu Glu Arg Gly Ser Leu Leu Gly
            180   185   190

Cys Ser Ile Asp Ile Thr Ser Pro Val Asp Met Glu Ala Arg Met Ala
        195   200   205

Lys Gly Leu Val Lys Gly His Ala Tyr Ser Val Thr Gly Val Lys Glu
    210   215   220

Val Asn Tyr Arg Gly Glu Gly Val Lys Leu Ile Arg Leu Arg Asn Pro
225   230   235   240

Trp Gly Gln Val Glu Trp Thr Gly Asp Trp Ser Asp Ser Ser Pro Asp
                245   250   255

Trp Asn Ile Val Asp Pro Asp Glu Lys Ala Arg Leu Gln Leu Lys Phe
            260   265   270

Glu Asp Gly Glu Phe Trp Met Ser Phe Glu Asp Phe Leu Arg His
        275   280   285

<210> 120
<211> 497
<212> PRT
<213> Homo sapiens

<400> 120
Met Ala Ala Ala Gln Pro Lys Tyr Pro Ala Gly Ala Thr Ala Arg Arg
  1   5   10   15

Leu Ala Arg Gly Cys Trp Ser Ala Leu Trp Asp Tyr Glu Thr Pro Lys
            20   25   30

Val Ile Val Val Arg Asn Arg Arg Leu Gly Val Leu Tyr Arg Ala Val
        35   40   45

Gln Leu Leu Ile Leu Leu Tyr Phe Val Trp Tyr Val Phe Ile Val Gln
    50   55   60

Lys Ser Tyr Gln Glu Ser Glu Thr Gly Pro Glu Ser Ser Ile Ile Thr
190

```
      65                  70                  75                  80

Lys Val Lys Gly Ile Thr Thr Ser Glu His Lys Val Trp Asp Val Glu
                        85                  90                  95

Glu Tyr Val Lys Pro Pro Glu Gly Gly Ser Val Phe Ser Ile Ile Thr
                100                 105                 110

Arg Val Glu Ala Thr His Ser Gln Thr Gln Gly Thr Cys Pro Glu Ser
            115                 120                 125

Ile Arg Val His Asn Ala Thr Cys Leu Ser Asp Ala Asp Cys Val Ala
        130                 135                 140

Gly Glu Leu Asp Met Leu Gly Asn Gly Leu Arg Thr Gly Arg Cys Val
145                 150                 155                 160

Pro Tyr Tyr Gln Gly Pro Ser Lys Thr Cys Glu Val Phe Gly Trp Cys
                165                 170                 175

Pro Val Glu Asp Gly Ala Ser Val Ser Gln Phe Leu Gly Thr Met Ala
                180                 185                 190

Pro Asn Phe Thr Ile Leu Ile Lys Asn Ser Ile His Tyr Pro Lys Phe
            195                 200                 205

His Phe Ser Lys Gly Asn Ile Ala Asp Arg Thr Asp Gly Tyr Leu Lys
        210                 215                 220

Arg Cys Thr Phe His Glu Ala Ser Asp Leu Tyr Cys Pro Ile Phe Lys
225                 230                 235                 240

Leu Gly Phe Ile Val Glu Lys Ala Gly Glu Ser Phe Thr Glu Leu Ala
                245                 250                 255

His Lys Gly Gly Val Ile Gly Val Ile Ile Asn Trp Asp Cys Asp Leu
                260                 265                 270

Asp Leu Pro Ala Ser Glu Cys Asn Pro Lys Tyr Ser Phe Arg Arg Leu
            275                 280                 285

Asp Pro Lys His Val Pro Ala Ser Ser Gly Tyr Asn Phe Arg Phe Ala
        290                 295                 300

Lys Tyr Tyr Lys Ile Asn Gly Thr Thr Thr Arg Thr Leu Ile Lys Ala
305                 310                 315                 320

Tyr Gly Ile Arg Ile Asp Val Ile Val His Gly Gln Ala Gly Lys Phe
```

                                                    335
              325   330
Ser Leu Ile Pro Thr Ile Ile Asn Leu Ala Thr Ala Leu Thr Ser Val
              340   345   350

Gly Val Val Arg Asn Pro Leu Trp Gly Pro Ser Gly Cys Gly Gly Ser
         355   360   365

Thr Arg Pro Leu His Thr Gly Leu Cys Trp Pro Gln Gly Ser Phe Leu
     370   375   380

Cys Asp Trp Ile Leu Leu Thr Phe Met Asn Lys Asn Lys Val Tyr Ser
385   390   395   400

His Lys Lys Phe Asp Lys Val Cys Thr Pro Ser His Pro Ser Gly Ser
              405   410   415

Trp Pro Val Thr Leu Ala Arg Val Leu Gly Gln Ala Pro Pro Glu Pro
              420   425   430

Gly His Arg Ser Glu Asp Gln His Pro Ser Pro Pro Ser Gly Gln Glu
         435   440   445

Gly Gln Gln Gly Ala Glu Cys Gly Pro Ala Phe Pro Pro Leu Arg Pro
     450   455   460

Cys Pro Ile Ser Ala Pro Ser Glu Gln Met Val Asp Thr Pro Ala Ser
465   470   475   480

Glu Pro Ala Gln Ala Ser Thr Pro Thr Asp Pro Lys Gly Leu Ala Gln
              485   490   495

Leu

192

```
Val Ile Val Val Arg Asn Arg Arg Leu Gly Val Leu Tyr Arg Ala Val
              35                  40                  45

Gln Leu Leu Ile Leu Leu Tyr Phe Val Trp Tyr Val Phe Ile Val Gln
         50                  55                  60

Lys Ser Tyr Gln Glu Ser Glu Thr Gly Pro Glu Ser Ser Ile Ile Thr
    65                  70                  75                  80

Lys Val Lys Gly Ile Thr Thr Ser Glu His Lys Val Trp Asp Val Glu
                  85                  90                  95

Glu Tyr Val Lys Pro Pro Glu Ser Ile Arg Val His Asn Ala Thr Cys
             100                 105                 110

Leu Ser Asp Ala Asp Cys Val Ala Gly Glu Leu Asp Met Leu Gly Asn
         115                 120                 125

Gly Leu Arg Thr Gly Arg Cys Val Pro Tyr Tyr Gln Gly Pro Ser Lys
    130                 135                 140

Thr Cys Glu Val Phe Gly Trp Cys Pro Val Glu Asp Gly Ala Ser Val
145                 150                 155                 160

Ser Gln Phe Leu Gly Thr Met Ala Pro Asn Phe Thr Ile Leu Ile Lys
              165                 170                 175

Asn Ser Ile His Tyr Pro Lys Phe His Phe Ser Lys Gly Asn Ile Ala
             180                 185                 190

Asp Arg Thr Asp Gly Tyr Leu Lys Arg Cys Thr Phe His Glu Ala Ser
         195                 200                 205

Asp Leu Tyr Cys Pro Ile Phe Lys Leu Gly Phe Ile Val Glu Lys Ala
    210                 215                 220

Gly Glu Ser Phe Thr Glu Leu Ala His Lys Gly Gly Val Ile Gly Val
225                 230                 235                 240

Ile Ile Asn Trp Asp Cys Asp Leu Asp Leu Pro Ala Ser Glu Cys Asn
              245                 250                 255

Pro Lys Tyr Ser Phe Arg Arg Leu Asp Pro Lys His Val Pro Ala Ser
         260                 265                 270

Ser Gly Tyr Asn Phe Arg Phe Ala Lys Tyr Tyr Lys Ile Asn Gly Thr
         275                 280                 285
```

Thr Thr Arg Thr Leu Ile Lys Ala Tyr Gly Ile Arg Ile Asp Val Ile
290   295   300

Val His Gly Gln Ala Gly Lys Phe Ser Leu Ile Pro Thr Ile Ile Asn
305   310   315   320

Leu Ala Thr Ala Leu Thr Ser Val Gly Val Gly Ser Phe Leu Cys Asp
                325   330   335

Trp Ile Leu Leu Thr Phe Met Asn Lys Asn Lys Val Tyr Ser His Lys
                340   345   350

Lys Phe Asp Lys Val Cys Thr Pro Ser His Pro Ser Gly Ser Trp Pro
        355   360   365

Val Thr Leu Ala Arg Val Leu Gly Gln Ala Pro Pro Glu Pro Gly His
    370   375   380

Arg Ser Glu Asp Gln His Pro Ser Pro Pro Ser Gly Gln Glu Gly Gln
385   390   395   400

Gln Gly Ala Glu Cys Gly Pro Ala Phe Pro Pro Leu Arg Pro Cys Pro
                405   410   415

Ile Ser Ala Pro Ser Glu Gln Met Val Asp Thr Pro Ala Ser Glu Pro
                420   425   430

Ala Gln Ala Ser Thr Pro Thr Asp Pro Lys Gly Leu Ala Gln Leu
        435   440   445

<210> 122
<211> 447
<212> PRT
<213> Homo sapiens

<400> 122
Met Ala Ala Ala Gln Pro Lys Tyr Pro Ala Gly Ala Thr Ala Arg Arg
    1   5   10   15

Leu Ala Arg Gly Cys Trp Ser Ala Leu Trp Asp Tyr Glu Thr Pro Lys
                20   25   30

Val Ile Val Val Arg Asn Arg Arg Leu Gly Val Leu Tyr Arg Ala Val
            35   40   45

Gln Leu Leu Ile Leu Leu Tyr Phe Val Trp Tyr Val Phe Ile Val Gln
    50   55   60

194

```
Lys Ser Tyr Gln Glu Ser Glu Thr Gly Pro Glu Ser Ser Ile Ile Thr
 65                      70                  75                  80

Lys Val Lys Gly Ile Thr Thr Ser Glu His Lys Val Trp Asp Val Glu
                 85                  90                  95

Glu Tyr Val Lys Pro Pro Glu Ser Ile Arg Val His Asn Ala Thr Cys
             100                 105                 110

Leu Ser Asp Ala Asp Cys Val Ala Gly Glu Leu Asp Met Leu Gly Asn
         115                 120                 125

Gly Leu Arg Thr Gly Arg Cys Val Pro Tyr Tyr Gln Gly Pro Ser Lys
     130                 135                 140

Thr Cys Glu Val Phe Gly Trp Cys Pro Val Glu Asp Gly Ala Ser Val
145                 150                 155                 160

Ser Gln Phe Leu Gly Thr Met Ala Pro Asn Phe Thr Ile Leu Ile Lys
             165                 170                 175

Asn Ser Ile His Tyr Pro Lys Phe His Phe Ser Lys Gly Asn Ile Ala
         180                 185                 190

Asp Arg Thr Asp Gly Tyr Leu Lys Arg Cys Thr Phe His Glu Ala Ser
     195                 200                 205

Asp Leu Tyr Cys Pro Ile Phe Lys Leu Gly Phe Ile Val Glu Lys Ala
     210                 215                 220

Gly Glu Ser Phe Thr Glu Leu Ala His Lys Gly Gly Val Ile Gly Val
225                 230                 235                 240

Ile Ile Asn Trp Asp Cys Asp Leu Asp Leu Pro Ala Ser Glu Cys Asn
             245                 250                 255

Pro Lys Tyr Ser Phe Arg Arg Leu Asp Pro Lys His Val Pro Ala Ser
         260                 265                 270

Ser Gly Tyr Asn Phe Arg Phe Ala Lys Tyr Tyr Lys Ile Asn Gly Thr
         275                 280                 285

Thr Thr Arg Thr Leu Ile Lys Ala Tyr Gly Ile Arg Ile Asp Val Ile
     290                 295                 300

Val His Gly Gln Ala Gly Lys Phe Ser Leu Ile Pro Thr Ile Ile Asn
305                 310                 315                 320

                         195
```

Leu Ala Thr Ala Leu Thr Ser Val Gly Val Gly Ser Phe Leu Cys Asp
                325   330   335

Trp Ile Leu Leu Thr Phe Met Asn Lys Asn Lys Val Tyr Ser His Lys
                340   345   350

Lys Phe Asp Lys Val Cys Thr Pro Ser His Pro Ser Gly Ser Trp Pro
        355   360   365

Val Thr Leu Ala Arg Val Leu Gly Gln Ala Pro Pro Glu Pro Gly His
    370   375   380

Arg Ser Glu Asp Gln His Pro Ser Pro Pro Ser Gly Gln Glu Gly Gln
385   390   395   400

Gln Gly Ala Glu Cys Gly Pro Ala Phe Pro Pro Leu Arg Pro Cys Pro
                405   410   415

Ile Ser Ala Pro Ser Glu Gln Met Val Asp Thr Pro Ala Ser Glu Pro
            420   425   430

Ala Gln Ala Ser Thr Pro Thr Asp Pro Lys Gly Leu Ala Gln Leu
        435   440   445

<210> 123
<211> 459
<212> PRT
<213> Homo sapiens

<400> 123
Met Val Arg Arg Leu Ala Arg Gly Cys Trp Ser Ala Leu Trp Asp Tyr
    1   5   10   15

Glu Thr Pro Lys Val Ile Val Val Arg Asn Arg Arg Leu Gly Val Leu
                20   25   30

Tyr Arg Ala Val Gln Leu Leu Ile Leu Leu Tyr Phe Val Trp Tyr Val
        35   40   45

Phe Ile Val Gln Lys Ser Tyr Gln Glu Ser Glu Thr Gly Pro Glu Ser
    50   55   60

Ser Ile Ile Thr Lys Val Lys Gly Ile Thr Thr Ser Glu His Lys Val
    65   70   75   80

Trp Asp Val Glu Glu Tyr Val Lys Pro Pro Glu Gly Gly Ser Val Phe

196

```
                      85                    90                    95

Ser Ile Ile Thr Arg Val Glu Ala Thr His Ser Gln Thr Gln Gly Thr
            100                    105                   110

Cys Pro Glu Ser Ile Arg Val His Asn Ala Thr Cys Leu Ser Asp Ala
         115                    120                   125

Asp Cys Val Ala Gly Glu Leu Asp Met Leu Gly Asn Gly Leu Arg Thr
      130                    135                   140

Gly Arg Cys Val Pro Tyr Tyr Gln Gly Pro Ser Lys Thr Cys Glu Val
145                    150                   155                   160

Phe Gly Trp Cys Pro Val Glu Asp Gly Ala Ser Val Ser Gln Phe Leu
               165                   170                   175

Gly Thr Met Ala Pro Asn Phe Thr Ile Leu Ile Lys Asn Ser Ile His
            180                    185                   190

Tyr Pro Lys Phe His Phe Ser Lys Gly Asn Ile Ala Asp Arg Thr Asp
         195                    200                   205

Gly Tyr Leu Lys Arg Cys Thr Phe His Glu Ala Ser Asp Leu Tyr Cys
      210                    215                   220

Pro Ile Phe Lys Leu Gly Phe Ile Val Glu Lys Ala Gly Glu Ser Phe
225                    230                   235                   240

Thr Glu Leu Ala His Lys Gly Gly Val Ile Gly Val Ile Ile Asn Trp
               245                   250                   255

Asp Cys Asp Leu Asp Leu Pro Ala Ser Glu Cys Asn Pro Lys Tyr Ser
            260                    265                   270

Phe Arg Arg Leu Asp Pro Lys His Val Pro Ala Ser Ser Gly Tyr Asn
         275                    280                   285

Phe Arg Phe Ala Lys Tyr Tyr Lys Ile Asn Gly Thr Thr Thr Arg Thr
      290                    295                   300

Leu Ile Lys Ala Tyr Gly Ile Arg Ile Asp Val Ile Val His Gly Gln
305                    310                    315                   320

Ala Gly Lys Phe Ser Leu Ile Pro Thr Ile Ile Asn Leu Ala Thr Ala
               325                   330                   335

Leu Thr Ser Val Gly Val Gly Ser Phe Leu Cys Asp Trp Ile Leu Leu
                            197
```

```
                340                    345                      350
Thr Phe Met Asn Lys Asn Lys Val Tyr Ser His Lys Lys Phe Asp Lys
         355                    360                      365

Val Cys Thr Pro Ser His Pro Ser Gly Ser Trp Pro Val Thr Leu Ala
    370                    375                      380

Arg Val Leu Gly Gln Ala Pro Pro Glu Pro Gly His Arg Ser Glu Asp
385                    390                      395                      400

Gln His Pro Ser Pro Pro Ser Gly Gln Glu Gly Gln Gln Gly Ala Glu
              405                    410                      415

Cys Gly Pro Ala Phe Pro Pro Leu Arg Pro Cys Pro Ile Ser Ala Pro
         420                    425                      430

Ser Glu Gln Met Val Asp Thr Pro Ala Ser Glu Pro Ala Gln Ala Ser
         435                    440                      445

Thr Pro Thr Asp Pro Lys Gly Leu Ala Gln Leu
    450                    455


<210> 124
<211> 404
<212> PRT
<213> Homo sapiens

<400> 124
Met Ala Ala Ala Gln Pro Lys Tyr Pro Ala Gly Ala Thr Ala Arg Arg
    1                    5                      10                      15

Leu Ala Arg Gly Cys Trp Ser Ala Leu Trp Asp Tyr Glu Thr Pro Lys
              20                    25                      30

Val Ile Val Val Arg Asn Arg Arg Leu Gly Val Leu Tyr Arg Ala Val
         35                    40                      45

Gln Leu Leu Ile Leu Leu Tyr Phe Val Trp Tyr Val Phe Ile Val Gln
    50                    55                      60

Lys Ser Tyr Gln Glu Ser Glu Thr Gly Pro Glu Ser Ser Ile Ile Thr
65                    70                      75                      80

Lys Val Lys Gly Ile Thr Thr Ser Glu His Lys Val Trp Asp Val Glu
              85                    90                      95
```

Glu Tyr Val Lys Pro Pro Glu Gly Gly Ser Val Phe Ser Ile Ile Thr
                100   105   110

Arg Val Glu Ala Thr His Ser Gln Thr Gln Gly Thr Cys Pro Glu Ser
        115   120   125

Ile Arg Val His Asn Ala Thr Cys Leu Ser Asp Ala Asp Cys Val Ala
     130   135   140

Gly Glu Leu Asp Met Leu Gly Asn Gly Leu Arg Thr Gly Arg Cys Val
145   150   155   160

Pro Tyr Tyr Gln Gly Pro Ser Lys Thr Cys Glu Val Phe Gly Trp Cys
                165   170   175

Pro Val Glu Asp Gly Ala Ser Val Ser Gln Phe Leu Gly Thr Met Ala
                180   185   190

Pro Asn Phe Thr Ile Leu Ile Lys Asn Ser Ile His Tyr Pro Lys Phe
        195   200   205

His Phe Ser Lys Gly Asn Ile Ala Asp Arg Thr Asp Gly Tyr Leu Lys
     210   215   220

Arg Cys Thr Phe His Glu Ala Ser Asp Leu Tyr Cys Pro Ile Phe Lys
225   230   235   240

Leu Gly Phe Ile Val Glu Lys Ala Gly Glu Ser Phe Thr Glu Leu Ala
                245   250   255

His Lys Gly Gly Val Ile Gly Val Ile Ile Asn Trp Asp Cys Asp Leu
                260   265   270

Asp Leu Pro Ala Ser Glu Cys Asn Pro Lys Tyr Ser Phe Arg Arg Leu
        275   280   285

Asp Pro Lys His Val Pro Ala Ser Ser Gly Tyr Asn Phe Arg Phe Ala
     290   295   300

Lys Tyr Tyr Lys Ile Asn Gly Thr Thr Thr Arg Thr Leu Ile Lys Ala
305   310   315   320

Tyr Gly Ile Arg Ile Asp Val Ile Val His Gly Gln Ala Gly Lys Phe
                325   330   335

Ser Leu Ile Pro Thr Ile Ile Asn Leu Ala Thr Ala Leu Thr Ser Val
                340   345   350

Gly Val Gly Ser Phe Leu Cys Asp Trp Ile Leu Leu Thr Phe Met Asn
        355   360   365

Lys Asn Lys Val Tyr Ser His Lys Lys Phe Asp Lys Met Val Asp Thr
    370   375   380

Pro Ala Ser Glu Pro Ala Gln Ala Ser Thr Pro Thr Asp Pro Lys Gly
385   390   395   400

Leu Ala Gln Leu

<210> 125
<211> 364
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: P2X_receptor
      domain sequence

<400> 125
Phe Asp Tyr Lys Thr Pro Lys Tyr Val Val Val Arg Asn Lys Lys Val
  1   5   10   15

Gly Leu Leu Asn Arg Leu Val Gln Leu Leu Ile Leu Val Tyr Val Val
            20   25   30

Gly Trp Val Phe Leu Ile Glu Lys Gly Tyr Gln Asp Ser Asp Thr Ser
        35   40   45

Leu Gln Ser Ser Val Ile Thr Lys Val Lys Gly Val Ala Val Thr Asn
    50   55   60

Thr Ser Glu Leu Gly Asn Arg Val Trp Asp Val Ala Asp Tyr Val Ile
  65   70   75   80

Pro Pro Gln Gly Glu Asn Val Phe Phe Val Val Thr Asn Phe Ile Val
                85   90   95

Thr Pro Asn Gln Thr Gln Gly Thr Cys Pro Glu His Pro Glu Val Pro
            100   105   110

Asp Gly Thr Cys Lys Ser Asp Ser Asp Cys Thr Ala Gly Glu Ala Gly
        115   120   125

Thr His Gly Asn Gly Ile Lys Thr Gly Arg Cys Val Ala Phe Asn Gly
                            200

Ser Val Arg Arg Thr Cys Glu Ile Phe Ala Trp Cys Pro Val Glu Val
145   150   155   160

Asp Thr Val Pro Asn Pro Pro Leu Leu Lys Glu Ala Glu Asn Phe Thr
                    165   170   175

Ile Phe Ile Lys Asn Ser Ile Arg Phe Pro Lys Phe Asn Phe Ser Lys
                    180   185   190

Gly Asn Leu Leu Glu Asn Lys Thr Asp Thr Tyr Leu Lys His Cys Arg
             195   200   205

Phe His Pro Thr Asn Asp Pro Tyr Cys Pro Ile Phe Arg Leu Gly Asp
        210   215   220

Val Val Glu Lys Ala Gly Gln Asp Phe Gln Asp Leu Ala Leu Lys Gly
225   230   235   240

Gly Val Ile Gly Ile Ile Ile Asn Trp Asp Cys Asp Leu Asp Lys Ala
                    245   250   255

Ala Ser Glu Cys Asn Pro His Tyr Ser Phe Arg Arg Leu Asp Asn Lys
             260   265   270

Lys Glu Lys Ser Val Ser Pro Gly Tyr Asn Phe Arg Phe Ala Lys Tyr
        275   280   285

Tyr Arg Asp Asn Asn Gly Val Glu Tyr Arg Thr Leu Leu Lys Ala Tyr
        290   295   300

Gly Ile Arg Phe Asp Val Leu Val Asn Gly Lys Ala Gly Lys Phe Asp
305   310   315   320

Ile Ile Pro Thr Ile Ile Asn Ile Gly Ser Gly Leu Ala Ser Leu Gly
                    325   330   335

Val Gly Thr Phe Leu Cys Asp Leu Ile Leu Leu Tyr Phe Leu Lys Lys
                    340   345   350

Arg His Phe Tyr Arg Asp Lys Lys Phe Glu Glu Val
        355   360

<210> 126
<211> 571
<212> PRT

<213> Mus musculus

<400> 126

Met Asp His Thr Ala Pro Thr Tyr Met Leu Ala Asn Leu Thr His Leu
1   5   10   15

His Ser Glu Gln Leu Leu Gln Gly Leu Asn Leu Leu Arg Gln His His
            20   25   30

Glu Leu Cys Asp Ile Ile Leu Arg Val Gly Asp Val Lys Ile His Ala
        35   40   45

His Lys Val Val Leu Ala Ser Ile Ser Pro Tyr Phe Lys Ala Met Phe
    50   55   60

Thr Gly Asn Leu Ser Glu Lys Glu Asn Ser Glu Val Glu Phe Gln Cys
65   70   75   80

Ile Asp Glu Ala Ala Leu Gln Ala Ile Val Glu Tyr Ala Tyr Thr Gly
                85   90   95

Thr Val Phe Ile Ser Gln Asp Thr Val Glu Ser Leu Leu Pro Ala Ala
                100   105   110

Asn Leu Leu Gln Ile Lys Leu Val Leu Lys Glu Cys Cys Ala Phe Leu
        115   120   125

Glu Ser Gln Leu Asp Pro Gly Asn Cys Ile Gly Ile Ser Arg Phe Ala
        130   135   140

Glu Thr Tyr Gly Cys His Asp Leu Tyr Leu Ala Ala Thr Lys Phe Ile
145   150   155   160

Cys Gln Asn Phe Glu Ser Val Cys Gln Thr Glu Glu Phe Phe Glu Leu
            165   170   175

Thr His Ala Asp Leu Asp Glu Ile Val Ser Asn Asp Cys Leu Asn Val
            180   185   190

Ala Thr Glu Glu Thr Val Phe Tyr Ala Leu Glu Ser Trp Ile Lys Tyr
        195   200   205

Asp Val Gln Glu Arg Gln Lys Tyr Leu Ala Gln Leu Leu Asn Ser Val
        210   215   220

Arg Leu Pro Leu Leu Ser Val Lys Phe Leu Thr Arg Leu Tyr Glu Ala
225   230   235   240

Asn His Leu Ile Arg Asp Asp Arg Thr Cys Lys His Leu Leu Asn Glu
                245   250   255

Ala Leu Lys Tyr His Phe Met Pro Glu His Arg Leu Ser His Gln Thr
                260   265   270

Val Leu Met Thr Arg Pro Arg Cys Ala Pro Lys Val Leu Cys Ala Val
            275   280   285

Gly Gly Lys Ser Gly Leu Phe Ala Cys Leu Asp Ser Val Glu Met Tyr
        290   295   300

Phe Pro Gln Asn Asp Ser Trp Ile Gly Leu Ala Pro Leu Asn Ile Pro
305   310   315   320

Arg Tyr Glu Phe Gly Ile Cys Val Leu Asp Gln Lys Val Phe Val Ile
                325   330   335

Gly Gly Ile Glu Thr Ser Val Arg Pro Gly Met Thr Val Arg Lys His
            340   345   350

Glu Asn Ser Val Glu Cys Trp Asn Pro Asp Thr Asn Thr Trp Thr Ser
        355   360   365

Leu Glu Arg Met Asn Glu Ser Arg Ser Thr Leu Gly Val Ala Val Leu
        370   375   380

Ala Gly Glu Val Phe Ala Leu Gly Gly Tyr Asp Gly Gln Ser Tyr Leu
385   390   395   400

Gln Ser Val Glu Lys Tyr Ile Pro Lys Ile Arg Gln Trp Gln Pro Val
                405   410   415

Ala Pro Met Thr Thr Thr Arg Ser Cys Phe Ala Ala Ala Val Leu Asp
            420   425   430

Gly Met Leu Tyr Ala Ile Gly Gly Tyr Gly Pro Ala His Met Asn Ser
        435   440   445

Val Glu Arg Tyr Asp Pro Ser Lys Asp Ser Trp Glu Met Val Ala Pro
        450   455   460

Met Ala Asp Lys Arg Ile His Phe Gly Val Gly Val Met Leu Gly Phe
465   470   475   480

Ile Phe Val Val Gly Gly His Asn Gly Val Ser His Leu Ser Ser Ile
                485   490   495

Glu Arg Tyr Asp Pro His Gln Asn Gln Trp Thr Val Cys Arg Pro Met
                500   505   510

Lys Glu Pro Arg Thr Gly Val Gly Ala Ala Val Ile Asp Asn Tyr Leu
            515   520   525

Tyr Val Val Gly Gly His Ser Gly Ser Ser Tyr Leu Asn Thr Val Gln
        530   535   540

Lys Tyr Asp Pro Ile Ser Asp Thr Trp Leu Asp Ser Ala Gly Met Ile
545   550   555   560

Tyr Cys Arg Cys Asn Phe Gly Leu Thr Ala Leu
                565   570

<210> 127
<211> 300
<212> PRT
<213> Homo sapiens

<400> 127
Met Asp His Thr Ser Pro Thr Tyr Met Leu Ala Asn Leu Thr His Leu
  1   5   10   15

His Ser Glu Gln Leu Leu Gln Gly Leu Asn Leu Leu Arg Gln His His
            20   25   30

Glu Leu Cys Asp Ile Ile Leu Arg Val Gly Asp Val Lys Ile His Ala
        35   40   45

His Lys Val Val Leu Ala Ser Val Ser Pro Tyr Phe Lys Ala Met Phe
    50   55   60

Thr Gly Asn Leu Ser Glu Lys Glu Asn Ser Glu Val Glu Phe Gln Cys
 65   70   75   80

Ile Asp Glu Thr Ala Leu Gln Ala Ile Val Glu Tyr Ala Tyr Thr Gly
                85   90   95

Thr Val Phe Ile Ser Gln Asp Thr Val Glu Ser Leu Leu Pro Ala Ala
            100   105   110

Asn Leu Leu Gln Ile Lys Leu Val Leu Lys Glu Cys Cys Ala Phe Leu
        115   120   125

Glu Ser Gln Leu Asp Pro Gly Asn Cys Ile Gly Ile Ser Arg Phe Ala
    130   135   140

204

Glu Thr Tyr Gly Cys Arg Asp Leu Tyr Leu Ala Ala Thr Lys Tyr Ile
145   150   155   160

Cys Gln Asn Phe Glu Ala Val Cys Gln Thr Glu Glu Phe Phe Glu Leu
                165   170   175

Thr His Ala Asp Leu Asp Glu Ile Val Ser Asn Asp Cys Leu Asn Val
            180   185   190

Ala Thr Glu Glu Thr Val Phe Tyr Ala Leu Glu Ser Trp Ile Lys Tyr
        195   200   205

Asp Val Gln Glu Arg Gln Lys Tyr Leu Ala Gln Leu Leu Asn Ser Val
    210   215   220

Arg Leu Pro Leu Leu Ser Val Lys Phe Leu Thr Arg Leu Tyr Glu Ala
225   230   235   240

Asn His Leu Ile Arg Asp Asp Arg Thr Cys Lys His Leu Leu Asn Glu
                245   250   255

Ala Leu Lys Tyr His Phe Met Pro Glu His Arg Leu Ser His Gln Thr
            260   265   270

Val Leu Met Thr Arg Pro Arg Cys Ala Pro Lys Val Leu Cys Ala Val
        275   280   285

Gly Gly Lys Ser Gly Leu Phe Ala Cys Leu Asp Arg
    290   295   300

<210> 128
<211> 300
<212> PRT
<213> Homo sapiens

<400> 128
Met Asp His Thr Ser Pro Thr Tyr Met Pro Ala Asn Leu Thr His Leu
 1   5   10   15

His Ser Glu Gln Leu Leu Gln Gly Leu Asn Leu Leu Arg Gln His His
            20   25   30

Glu Leu Cys Asp Ile Ile Leu Arg Val Gly Asp Val Lys Ile His Ala
        35   40   45

His Lys Val Val Leu Ala Ser Val Ser Pro Tyr Phe Lys Ala Met Phe

205

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                                              60
        50                    55
Thr Gly Asn Leu Ser Glu Lys Glu Asn Ser Glu Val Glu Phe Gln Cys
                                                              80
 65                         70                    75

Ile Asp Glu Thr Ala Leu Gln Ala Phe Val Glu Tyr Ala Tyr Thr Gly
                    85                    90                    95

Thr Val Phe Ile Ser Gln Asp Thr Val Glu Ser Leu Leu Pro Ala Ala
              100                       105                  110

Asn Leu Leu Gln Ile Lys Leu Val Leu Lys Glu Cys Cys Ala Phe Leu
        115                       120                  125

Glu Ser Gln Leu Asp Pro Gly Asn Cys Ile Gly Ile Ser Arg Phe Ala
      130                   135                  140

Glu Thr Tyr Gly Cys Arg Asp Leu Tyr Leu Ala Ala Thr Lys Tyr Ile
145                   150                       155                  160

Cys Gln Asn Phe Glu Ala Val Cys Gln Thr Glu Glu Phe Phe Glu Leu
              165                       170                  175

Thr His Ala Asp Leu Asp Glu Ile Val Ser Asn Asp Cys Leu Asn Val
            180                       185                  190

Ala Thr Glu Glu Thr Val Phe Tyr Ala Leu Glu Ser Trp Ile Lys Tyr
          195                   200                       205

Asp Val Gln Glu Arg Gln Lys Tyr Leu Ala Gln Leu Leu Asn Ser Val
      210                   215                       220

Arg Leu Pro Leu Leu Ser Val Lys Phe Leu Thr Arg Leu Tyr Glu Ala
225                   230                       235                  240

Asn His Leu Ile Arg Asp Asp Arg Thr Cys Lys His Leu Leu Asn Glu
              245                       250                  255

Ala Leu Lys Tyr His Phe Met Pro Glu His Arg Leu Ser His Gln Thr
            260                   265                       270

Val Leu Met Thr Arg Pro Arg Cys Ala Pro Lys Val Leu Cys Ala Val
          275                   280                       285

Gly Gly Lys Ser Gly Leu Phe Ala Cys Leu Asp Arg
      290                   295                   300


                              206
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<210> 129
<211> 249
<212> PRT
<213> Mus musculus

<400> 129
Met Asp His Thr Ala Pro Thr Tyr Met Leu Ala Asn Leu Thr His Leu
1   5   10   15

His Ser Glu Gln Leu Leu Gln Gly Leu Asn Leu Leu Arg Gln His His
            20   25   30

Glu Leu Cys Asp Ile Ile Leu Arg Val Gly Asp Val Lys Ile His Ala
        35   40   45

His Lys Val Val Leu Ala Ser Ile Ser Pro Tyr Phe Lys Ala Met Phe
    50   55   60

Thr Gly Asn Leu Ser Glu Lys Glu Asn Ser Glu Val Glu Phe Gln Cys
65   70   75   80

Ile Asp Glu Ala Ala Leu Gln Ala Ile Val Glu Tyr Ala Tyr Thr Gly
                85   90   95

Thr Val Phe Ile Ser Gln Asp Thr Val Glu Ser Leu Leu Pro Ala Ala
            100   105   110

Asn Leu Leu Gln Ile Lys Leu Val Leu Lys Glu Cys Cys Ala Phe Leu
        115   120   125

Glu Ser Gln Leu Asp Pro Gly Asn Cys Ile Gly Ile Ser Arg Phe Ala
    130   135   140

Glu Thr Tyr Gly Cys His Asp Leu Tyr Leu Ala Ala Thr Lys Phe Ile
145   150   155   160

Cys Gln Asn Phe Glu Ser Val Cys Gln Thr Glu Glu Phe Phe Glu Leu
                165   170   175

Thr His Ala Asp Leu Asp Glu Ile Val Ser Asn Asp Cys Leu Asn Val
            180   185   190

Ala Thr Glu Glu Thr Val Phe Tyr Ala Leu Glu Ser Trp Ile Lys Tyr
        195   200   205

Asp Val Gln Glu Arg Gln Lys Tyr Leu Ala Gln Leu Leu Asn Ser Val
    210   215   220

207

Arg Leu Pro Leu Leu Ser Val Lys Phe Leu Thr Arg Leu Tyr Glu Ala
225   230   235   240

Asn His Leu Ile Arg Asp Asp Arg Thr
                245

<210> 130
<211> 601
<212> PRT
<213> Homo sapiens

<400> 130
Cys Thr Asn Ile Arg Pro Gly Glu Thr Gly Met Asp Val Thr Ser Arg
1   5   10   15

Cys Thr Leu Gly Asp Pro Asn Lys Leu Pro Glu Gly Val Pro Gln Pro
            20   25   30

Ala Arg Met Pro Tyr Ile Ser Asp Lys His Pro Arg Gln Thr Leu Glu
        35   40   45

Val Ile Asn Leu Leu Arg Lys His Arg Glu Leu Cys Asp Val Val Leu
    50   55   60

Val Val Gly Ala Lys Lys Ile Tyr Ala His Arg Val Ile Leu Ser Ala
65   70   75   80

Cys Ser Pro Tyr Phe Arg Ala Met Phe Thr Gly Glu Leu Ala Glu Ser
                85   90   95

Arg Gln Thr Glu Val Val Ile Arg Asp Ile Asp Glu Arg Ala Met Glu
            100   105   110

Leu Leu Ile Asp Phe Ala Tyr Thr Ser Gln Ile Thr Val Glu Glu Gly
        115   120   125

Asn Val Gln Thr Leu Leu Pro Ala Ala Cys Leu Leu Gln Leu Ala Glu
    130   135   140

Ile Gln Glu Ala Cys Cys Glu Phe Leu Lys Arg Gln Leu Asp Pro Ser
145   150   155   160

Asn Cys Leu Gly Ile Arg Ala Phe Ala Asp Thr His Ser Cys Arg Glu
            165   170   175

Leu Leu Arg Ile Ala Asp Lys Phe Thr Gln His Asn Phe Gln Glu Val
        180   185   190

208

```
Met Glu Ser Glu Glu Phe Met Leu Leu Pro Ala Asn Gln Leu Ile Asp
        195               200               205

Ile Ile Ser Ser Asp Glu Leu Asn Val Arg Ser Glu Glu Gln Val Phe
        210               215               220

Asn Ala Val Met Ala Trp Val Lys Tyr Ser Ile Gln Glu Arg Arg Pro
225               230               235               240

Gln Leu Pro Gln Val Leu Gln His Val Arg Leu Pro Leu Leu Ser Pro
            245               250               255

Lys Phe Leu Val Gly Thr Val Gly Ser Asp Pro Leu Ile Lys Ser Asp
            260               265               270

Glu Glu Cys Arg Asp Leu Val Asp Glu Ala Lys Asn Tyr Leu Leu Leu
            275               280               285

Pro Gln Glu Arg Pro Leu Met Gln Gly Pro Arg Thr Arg Pro Arg Lys
            290               295               300

Pro Ile Arg Cys Gly Glu Val Leu Phe Ala Val Gly Gly Trp Cys Ser
305               310               315               320

Gly Asp Ala Ile Ser Ser Val Glu Arg Tyr Asp Pro Gln Thr Asn Glu
            325               330               335

Trp Arg Met Val Ala Ser Met Ser Lys Arg Arg Cys Gly Val Gly Val
            340               345               350

Ser Val Leu Asp Asp Leu Leu Tyr Ala Val Gly Gly His Asp Gly Ser
            355               360               365

Ser Tyr Leu Asn Ser Val Glu Arg Tyr Asp Pro Lys Thr Asn Gln Trp
        370               375               380

Ser Ser Asp Val Ala Pro Thr Ser Thr Cys Arg Thr Ser Val Gly Val
385               390               395               400

Ala Val Leu Gly Gly Phe Leu Tyr Ala Val Gly Gly Gln Asp Gly Val
            405               410               415

Ser Cys Leu Asn Ile Val Glu Arg Tyr Asp Pro Lys Glu Asn Lys Trp
            420               425               430

Thr Arg Val Ala Ser Met Ser Thr Arg Arg Leu Gly Val Ala Val Ala
        435               440               445
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Val Leu Gly Gly Phe Leu Tyr Ala Val Gly Gly Ser Asp Gly Thr Ser
    450                 455                 460

Pro Leu Asn Thr Val Glu Arg Tyr Asn Pro Gln Glu Asn Arg Trp His
465                 470                 475                 480

Thr Ile Ala Pro Met Gly Thr Arg Arg Lys His Leu Gly Cys Ala Val
                485                 490                 495

Tyr Gln Asp Met Ile Tyr Ala Val Gly Gly Arg Asp Asp Thr Thr Glu
                500                 505                 510

Leu Ser Ser Ala Glu Arg Tyr Asn Pro Arg Thr Asn Gln Trp Ser Pro
        515                 520                 525

Val Val Ala Met Thr Ser Arg Arg Ser Gly Val Gly Leu Ala Val Val
        530                 535                 540

Asn Gly Gln Leu Met Ala Val Gly Gly Phe Asp Gly Thr Thr Tyr Leu
545                 550                 555                 560

Lys Thr Ile Glu Val Phe Asp Pro Asp Ala Asn Thr Trp Arg Leu Tyr
                565                 570                 575

Gly Gly Met Asn Tyr Arg Arg Leu Gly Gly Gly Val Gly Val Ile Lys
                580                 585                 590

Met Thr His Cys Glu Ser His Ile Trp
        595                 600


<210> 131
<211> 114
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:  BTB/POZ
      domain sequence

<400> 131
Ser Ser Leu Leu Lys Ser Leu Asn Glu Leu Arg Glu Asn Gly Glu Phe
  1                 5                  10                 15

Cys Asp Val Thr Leu Val Val Gly Gly Lys Glu Phe Pro Ala His Lys
                20                  25                 30
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210

Ala Val Leu Ala Ala Cys Ser Pro Tyr Phe Lys Ala Leu Phe Ser Gly
            35   40   45

Asn Phe Lys Glu Ser Asp Ser Ser Glu Ile Thr Leu Asp Asp Val Ser
    50   55   60

Pro Glu Asp Phe Glu Ala Leu Leu Glu Phe Ile Tyr Thr Gly Glu Leu
65   70   75   80

Ile Ile Thr Glu Glu Asn Val Glu Glu Leu Leu Glu Leu Ala Asp Lys
                85   90   95

Leu Gln Ile Pro Ser Leu Val Asp Lys Cys Glu Glu Phe Leu Ile Lys
            100   105   110

Asn Leu

<210> 132
<211> 96
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: BTB,
      Broad-Complex domain sequence

<400> 132
Asp Val Thr Leu Asn Val Gly Gly Lys Lys Phe His Ala His Lys Ala
  1   5   10   15

Val Leu Ala Ala His Ser Pro Tyr Phe Lys Ala Leu Phe Ser Ser Asp
                20   25   30

Phe Lys Glu Ser Asp Lys Ser Glu Ile Tyr Leu Phe Asp Val Ser Pro
            35   40   45

Glu Asp Phe Arg Ala Leu Leu Asn Phe Leu Tyr Thr Gly Lys Leu Asp
        50   55   60

Ile Pro Glu Glu Asn Val Glu Glu Leu Leu Glu Leu Ala Asp Tyr Leu
65   70   75   80

Gln Ile Pro Gly Leu Val Glu Leu Cys Glu Glu Phe Leu Leu Lys Asn
                85   90   95

<210> 133
<211> 46
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Kelch domain
      sequence

<400> 133
Ile Tyr Val Ile Gly Gly Phe Asn Gly Gly Gln Arg Leu Lys Ser Val
 1   5   10   15

Glu Val Tyr Asp Pro Glu Thr Asn Lys Trp Thr Pro Leu Pro Ser Met
            20   25   30

Pro Thr Pro Arg Ser Gly His Gly Val Ala Val Ile Asn Gly
        35   40   45

<210> 134
<211> 508
<212> PRT
<213> Homo sapiens

<400> 134
Met Ala Lys Ser Asn Gly Glu Asn Gly Pro Arg Ala Pro Ala Ala Gly
 1   5   10   15

Glu Ser Leu Ser Gly Thr Arg Glu Ser Leu Ala Gln Gly Pro Asp Ala
            20   25   30

Ala Thr Thr Asp Glu Leu Ser Ser Leu Gly Ser Asp Ser Glu Ala Asn
        35   40   45

Gly Phe Ala Glu Arg Arg Ile Asp Lys Phe Gly Phe Ile Val Gly Ser
    50   55   60

Gln Gly Ala Glu Gly Ala Leu Glu Glu Val Pro Leu Glu Val Leu Arg
65   70   75   80

Gln Arg Glu Ser Lys Trp Leu Asp Met Leu Asn Asn Trp Asp Lys Trp
            85   90   95

Met Ala Lys Lys His Lys Lys Ile Arg Leu Arg Cys Gln Lys Gly Ile

                            212

```
             100                105                110

Pro Pro Ser Leu Arg Gly Arg Ala Trp Gln Tyr Leu Ser Gly Gly Lys
        115                120                125

Val Lys Leu Gln Gln Asn Pro Gly Lys Phe Asp Glu Leu Asp Met Ser
     130                135                140

Pro Gly Asp Pro Lys Trp Leu Asp Val Ile Glu Arg Asp Leu His Arg
145                150                155                160

Gln Phe Pro Phe His Glu Met Phe Val Ser Arg Gly Gly His Gly Gln
                165                170                175

Gln Asp Leu Phe Arg Val Leu Lys Ala Tyr Thr Leu Tyr Arg Pro Glu
                180                185                190

Glu Gly Tyr Cys Gln Ala Gln Ala Pro Ile Ala Ala Val Leu Leu Met
                195                200                205

His Met Pro Ala Glu Gln Ala Phe Trp Cys Leu Val Gln Ile Cys Glu
     210                215                220

Lys Tyr Leu Pro Gly Tyr Tyr Ser Glu Lys Leu Glu Ala Ile Gln Leu
225                230                235                240

Asp Gly Glu Ile Leu Phe Ser Leu Leu Gln Lys Val Ser Pro Val Ala
                245                250                255

His Lys His Leu Ser Arg Gln Lys Ile Asp Pro Leu Leu Tyr Met Thr
                260                265                270

Glu Trp Phe Met Cys Ala Phe Ser Arg Thr Leu Pro Trp Ser Ser Val
     275                280                285

Leu Arg Val Trp Asp Met Phe Phe Cys Glu Gly Val Lys Ile Ile Phe
     290                295                300

Arg Val Gly Leu Val Leu Leu Lys His Ala Leu Gly Ser Pro Glu Lys
305                310                315                320

Val Lys Ala Cys Gln Gly Gln Tyr Glu Thr Ile Glu Arg Leu Arg Ser
                325                330                335

Leu Ser Pro Lys Ile Met Gln Glu Ala Phe Leu Val Gln Glu Val Val
                340                345                350

Glu Leu Pro Val Thr Glu Arg Gln Ile Glu Arg Glu His Leu Ile Gln

                          213
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            355                 360                 365

Leu Arg Arg Trp Gln Glu Thr Arg Gly Glu Leu Gln Cys Arg Ser Pro
    370                 375                 380

Pro Arg Leu His Gly Ala Lys Ala Ile Leu Asp Ala Glu Pro Gly Pro
385                 390                 395                 400

Arg Pro Ala Leu Gln Pro Ser Pro Ser Ile Arg Leu Pro Leu Asp Ala
                405                 410                 415

Pro Leu Pro Gly Ser Lys Ala Lys Pro Lys Pro Pro Lys Gln Ala Gln
                420                 425                 430

Lys Glu Gln Arg Lys Gln Met Lys Gly Arg Gly Gln Leu Glu Lys Pro
            435                 440                 445

Pro Ala Pro Asn Gln Ala Met Val Val Ala Ala Ala Gly Asp Ala Cys
    450                 455                 460

Pro Pro Gln His Val Pro Pro Lys Asp Ser Ala Pro Lys Asp Ser Ala
465                 470                 475                 480

Pro Gln Asp Leu Ala Pro Gln Val Ser Ala His His Arg Ser Gln Glu
                485                 490                 495

Ser Leu Thr Ser Gln Glu Ser Glu Asp Thr Tyr Leu
            500                 505


<210> 135
<211> 500
<212> PRT
<213> Mus musculus

<400> 135
Met Ala Lys Ser Ser Arg Glu Asn Gly Pro Arg Glu Pro Ala Ala Gly
  1                 5                 10                 15

Gly Ser Leu Ser Gly Thr Arg Glu Ser Leu Ala Gln Gly Pro Asp Ala
            20                 25                 30

Ala Thr Ala Asp Glu Leu Ser Ser Leu Gly Ser Asp Ser Glu Ala Asn
        35                 40                 45

Gly Phe Ala Glu Arg Arg Ile Asp Lys Phe Gly Phe Ile Val Gly Ser
    50                 55                 60
```

Gln Gly Ala Glu Gly Ala Leu Glu Glu Val Pro Leu Glu Val Leu Arg
65   70   75   80

Gln Arg Glu Ser Lys Trp Leu Asp Met Leu Asn Asn Trp Asp Lys Trp
                 85   90   95

Met Ala Lys Lys His Lys Lys Ile Arg Leu Arg Cys Gln Lys Gly Ile
            100   105   110

Pro Pro Ser Leu Arg Gly Arg Ala Trp Gln Tyr Leu Ser Gly Gly Lys
         115   120   125

Val Lys Leu Gln Gln Asn Pro Gly Lys Phe Asp Glu Leu Asp Met Ser
     130   135   140

Pro Gly Asp Pro Lys Trp Leu Asp Val Ile Glu Arg Asp Leu His Arg
145   150   155   160

Gln Phe Pro Phe His Glu Met Phe Val Ser Arg Gly Gly His Gly Gln
                 165   170   175

Gln Asp Leu Phe Arg Val Leu Lys Ala Tyr Thr Leu Tyr Arg Pro Glu
             180   185   190

Glu Gly Tyr Cys Gln Ala Gln Ala Pro Ile Ala Ala Val Leu Leu Met
         195   200   205

His Met Pro Ala Glu Gln Ala Phe Trp Cys Leu Val Gln Val Cys Glu
     210   215   220

Lys Tyr Leu Pro Gly Tyr Tyr Ser Glu Lys Leu Glu Ala Ile Gln Leu
225   230   235   240

Asp Gly Glu Ile Leu Phe Ser Leu Leu Gln Lys Val Ser Pro Val Ala
             245   250   255

His Lys His Leu Ser Arg Gln Lys Ile Asp Pro Leu Leu Tyr Met Thr
             260   265   270

Glu Trp Phe Met Cys Ala Phe Ala Arg Thr Leu Pro Trp Ser Ser Val
         275   280   285

Leu Arg Val Trp Asp Met Phe Phe Cys Glu Gly Val Lys Ile Ile Phe
     290   295   300

Arg Val Gly Leu Val Leu Leu Lys His Ala Leu Gly Ser Pro Glu Lys
305   310   315   320

Leu Lys Ala Cys Gln Gly Gln Tyr Glu Thr Ile Glu Gln Leu Arg Ser
                325   330   335

Leu Ser Pro Lys Ile Met Gln Glu Ala Phe Leu Val Gln Glu Val Ile
            340   345   350

Glu Leu Pro Val Thr Glu Arg Gln Ile Glu Arg Glu His Leu Ile Gln
        355   360   365

Leu Arg Arg Trp Gln Glu Thr Arg Gly Glu Leu Glu Cys Arg Ser Leu
    370   375   380

Pro Arg Met His Gly Ala Lys Ala Ile Leu Asp Ala Glu Pro Gly Pro
385   390   395   400

Arg Pro Ala Leu Gln Pro Ser Pro Ser Ile Arg Leu Pro Pro Asp Ala
                405   410   415

Ala Leu Leu Ser Ser Lys Ala Lys Pro His Lys Gln Ala Gln Lys Glu
            420   425   430

Gln Lys Arg Thr Lys Thr Ser Ala Gln Leu Asp Lys Ser Pro Gly Leu
        435   440   445

Ser Gln Ala Thr Val Val Thr Ala Ala Gly Asp Ala Cys Pro Pro Gln
    450   455   460

Gly Val Ser Pro Lys Asp Pro Val Pro Gln Asp Pro Thr Pro Gln Asn
465   470   475   480

Leu Ala Cys His His Ser Gln Glu Ser Leu Thr Ser Gln Glu Ser Glu
                485   490   495

Asp Thr Tyr Leu
            500

<210> 136
<211> 438
<212> PRT
<213> Homo sapiens

<400> 136
Leu Glu Glu Val Pro Leu Glu Val Leu Arg Gln Arg Glu Ser Lys Trp
    1   5   10   15

Leu Asp Met Leu Asn Asn Trp Asp Lys Trp Met Ala Lys Lys His Lys
                20   25   30

216

```
Lys Ile Arg Leu Arg Cys Gln Lys Gly Ile Pro Pro Ser Leu Arg Gly
         35                  40                  45

Arg Ala Trp Gln Tyr Leu Ser Gly Gly Lys Val Lys Leu Gln Gln Asn
     50                  55                  60

Pro Gly Lys Phe Asp Glu Leu Asp Met Ser Pro Gly Asp Pro Lys Trp
 65                  70                  75                  80

Leu Asp Val Ile Glu Arg Asp Leu His Arg Gln Phe Pro Phe His Glu
                 85                  90                  95

Met Phe Val Ser Arg Gly Gly His Gly Gln Gln Asp Leu Phe Arg Val
             100                 105                 110

Leu Lys Ala Tyr Thr Leu Tyr Arg Pro Glu Glu Gly Tyr Cys Gln Ala
         115                 120                 125

Gln Ala Pro Ile Ala Ala Val Leu Leu Met His Met Pro Ala Glu Gln
     130                 135                 140

Ala Phe Trp Cys Leu Val Gln Ile Cys Glu Lys Tyr Leu Pro Gly Tyr
 145                 150                 155                 160

Tyr Ser Glu Lys Leu Glu Ala Ile Gln Leu Asp Gly Glu Ile Leu Phe
             165                 170                 175

Ser Leu Leu Gln Lys Val Ser Pro Val Ala His Lys His Leu Ser Arg
             180                 185                 190

Gln Lys Ile Asp Pro Leu Leu Tyr Met Thr Glu Trp Phe Met Cys Ala
         195                 200                 205

Phe Ser Arg Thr Leu Pro Trp Ser Ser Val Leu Arg Val Trp Asp Met
     210                 215                 220

Phe Phe Cys Glu Gly Val Lys Ile Ile Phe Arg Val Gly Leu Val Leu
 225                 230                 235                 240

Leu Lys His Ala Leu Gly Ser Pro Glu Lys Val Lys Ala Cys Gln Gly
             245                 250                 255

Gln Tyr Glu Thr Ile Glu Arg Leu Arg Ser Leu Ser Pro Lys Ile Met
             260                 265                 270

Gln Glu Ala Phe Leu Val Gln Glu Val Val Glu Leu Pro Val Thr Glu
         275                 280                 285
```

217

```
Arg Gln Ile Glu Arg Glu His Leu Ile Gln Leu Arg Arg Trp Gln Glu
    290             295                 300

Thr Arg Gly Glu Leu Gln Cys Arg Ser Pro Pro Arg Leu His Gly Ala
305             310                 315                 320

Lys Ala Ile Leu Asp Ala Glu Pro Gly Pro Arg Pro Ala Leu Gln Pro
                325                 330                 335

Ser Pro Ser Ile Arg Leu Pro Leu Asp Ala Pro Leu Pro Gly Ser Lys
                340                 345                 350

Ala Lys Pro Lys Pro Pro Lys Gln Ala Gln Lys Glu Gln Arg Lys Gln
            355                 360                 365

Met Lys Gly Arg Gly Gln Leu Glu Lys Pro Pro Ala Pro Asn Gln Ala
        370                 375                 380

Met Val Val Ala Ala Ala Gly Asp Ala Cys Pro Pro Gln His Val Pro
385                 390                 395                 400

Pro Lys Asp Ser Ala Pro Lys Asp Ser Ala Pro Gln Asp Leu Ala Pro
                405                 410                 415

Gln Val Ser Ala His His Arg Ser Gln Glu Ser Leu Thr Ser Gln Glu
            420                 425                 430

Ser Glu Asp Thr Tyr Leu
        435


<210> 137
<211> 533
<212> PRT
<213> Homo sapiens

<400> 137
Met Ser Gly Thr Leu Glu Ser Leu Ala Asp Asp Val Ser Ser Met Gly
  1             5                 10                  15

Ser Asp Ser Glu Ile Asn Gly Leu Ala Leu Arg Lys Thr Asp Lys Tyr
            20                  25                  30

Gly Phe Leu Gly Gly Ser Gln Tyr Ser Gly Ser Leu Glu Ser Ser Ile
        35                  40                  45

Pro Val Asp Val Ala Arg Gln Arg Glu Leu Lys Trp Leu Asp Met Phe
```

50   55   60

Ser Asn Trp Asp Lys Trp Leu Ser Arg Arg Phe Gln Lys Val Lys Leu
 65   70   75   80

Arg Cys Arg Lys Gly Ile Pro Ser Ser Leu Arg Ala Lys Ala Trp Gln
                   85   90   95

Tyr Leu Ser Asn Ser Lys Glu Leu Leu Glu Gln Asn Pro Gly Lys Phe
              100   105   110

Glu Glu Leu Glu Arg Ala Pro Gly Asp Pro Lys Trp Leu Asp Val Ile
         115   120   125

Glu Lys Asp Leu His Arg Gln Phe Pro Phe His Glu Met Phe Ala Ala
    130   135   140

Arg Gly Gly His Gly Gln Gln Asp Leu Tyr Arg Ile Leu Lys Ala Tyr
145   150   155   160

Thr Ile Tyr Arg Pro Asp Glu Gly Tyr Cys Gln Ala Gln Ala Pro Val
                 165   170   175

Ala Ala Val Leu Leu Met His Met Pro Ala Glu Gln Ala Phe Trp Cys
              180   185   190

Leu Val Gln Ile Cys Asp Lys Tyr Leu Pro Gly Tyr Tyr Ser Ala Gly
         195   200   205

Leu Glu Ala Ile Gln Leu Asp Gly Glu Ile Phe Phe Ala Leu Leu Arg
    210   215   220

Arg Ala Ser Pro Leu Ala His Arg His Leu Arg Arg Gln Arg Ile Asp
225   230   235   240

Pro Val Leu Tyr Met Thr Glu Trp Phe Met Cys Ile Phe Ala Arg Thr
              245   250   255

Leu Pro Trp Ala Ser Val Leu Arg Val Trp Asp Met Phe Phe Cys Glu
              260   265   270

Gly Val Lys Ile Ile Phe Arg Val Ala Leu Val Leu Leu Arg His Thr
         275   280   285

Leu Gly Ser Val Glu Lys Leu Arg Ser Cys Gln Gly Met Tyr Glu Thr
    290   295   300

Met Glu Gln Leu Arg Asn Leu Pro Gln Gln Cys Met Gln Glu Asp Phe
                              219

<213> Mus musculus

<400> 138
Met Ser Gly Thr Leu Glu Ser Leu Pro Asp Asp Val Ser Ser Met Gly
1   5   10   15

Ser Asp Ser Glu Ile Asn Gly Met Ala Leu Arg Lys Thr Asp Lys Tyr
                20   25   30

Gly Phe Leu Gly Gly Ser Gln Tyr Ser Gly Ser Leu Glu Ser Ser Ile
            35   40   45

Pro Val Asp Val Ala Arg Gln Arg Glu Leu Lys Trp Leu Glu Met Phe
        50   55   60

Ser Asn Trp Asp Lys Trp Leu Ser Arg Arg Phe Gln Lys Val Lys Leu
65   70   75   80

Arg Cys Arg Lys Gly Ile Pro Ser Ser Leu Arg Ala Lys Ala Trp Gln
                85   90   95

Tyr Leu Ser Asn Ser Lys Glu Leu Leu Glu Gln Asn Pro Gly Lys Phe
            100   105   110

Glu Glu Leu Glu Arg Ala Ala Gly Asp Pro Lys Trp Leu Asp Val Ile
        115   120   125

Glu Lys Asp Leu His Arg Gln Phe Pro Phe His Glu Met Phe Ala Ala
    130   135   140

Arg Gly Gly His Gly Gln Gln Asp Leu Tyr Arg Ile Leu Lys Ala Tyr
    145   150   155   160

Thr Ile Tyr Arg Pro Asp Glu Gly Tyr Cys Gln Ala Gln Ala Pro Val
            165   170   175

Ala Ala Val Leu Leu Met His Met Pro Ala Glu Gln Ala Phe Trp Cys
            180   185   190

Leu Val Gln Ile Cys Asp Lys Tyr Leu Pro Gly Tyr Tyr Ser Ala Gly
        195   200   205

Leu Glu Ala Ile Gln Leu Asp Gly Glu Ile Phe Phe Ala Leu Leu Arg
    210   215   220

Arg Val Ser Pro Leu Ala His Arg His Leu Arg Arg Gln Arg Ile Asp
225   230   235   240

221

Pro Val Leu Tyr Met Thr Glu Trp Phe Met Cys Ile Phe Ala Arg Thr
                  245   250   255

Leu Pro Trp Ala Ser Val Leu Arg Val Trp Asp Met Phe Phe Cys Glu
              260   265   270

Gly Val Lys Ile Ile Phe Arg Val Ala Leu Val Leu Leu Arg His Thr
          275   280   285

Leu Gly Ser Val Glu Lys Leu Arg Ser Cys Gln Gly Met Tyr Glu Thr
      290   295   300

Met Glu Gln Leu Arg Asn Leu Pro Gln Gln Cys Met Gln Glu Asp Phe
305   310   315   320

Leu Val His Glu Val Thr Asn Leu Pro Val Thr Glu Ala Trp Ile Glu
              325   330   335

Arg Glu Asn Ala Ala Gln Leu Lys Lys Trp Arg Glu Thr Arg Gly Glu
          340   345   350

Leu Gln Tyr Arg Pro Ser Arg Arg Leu His Gly Ser Arg Ala Ile His
      355   360   365

Glu Glu Arg Arg Arg Gln Gln Pro Pro Leu Gly Pro Ser Ser Ser Leu
      370   375   380

Leu Ser Leu Pro Ser Leu Lys Ser Arg Gly Ser Arg Ala Val Gly Gly
385   390   395   400

Ala Pro Ser Pro Pro Pro Pro Val Arg Arg Ala Ser Ala Gly Pro Val
              405   410   415

Pro Gly Ala Val Val Ile Ala Glu Gly Leu His Pro Ser Leu Pro Ser
              420   425   430

Pro Thr Gly Ser Ser Thr Pro Leu Gly Thr Ser Lys Glu Ile Arg Arg
          435   440   445

Gln Glu Lys Glu Arg Gln Lys Gln Glu Lys Asp Arg Glu Lys Glu Arg
      450   455   460

Gln Arg Gln Glu Lys Glu Arg Glu Arg Gln Glu Lys Glu Arg Gln Lys
465   470   475   480

Trp Glu Lys Glu Gln Glu Lys Glu Gln Arg Lys Gln Glu Lys Glu Arg
              485   490   495

Gln Lys Leu Glu Lys Lys Gly Gln Gly Arg Lys Leu Ser Leu Arg Arg
                    500   505   510

Arg Ala Asp Gly Pro Pro Ala Ser His Asp Gly Gly Asp Arg Ser Ala
        515   520   525

Ala Glu Ala Arg Gln Asp Ala Tyr Phe
    530   535

<210> 139
<211> 209
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Domain in
      Tre-2 sequence

<400> 139
Val Arg Lys Gly Ile Pro Pro Ser Leu Arg Gly Glu Val Trp Lys Leu
  1   5   10   15

Leu Leu Asn Ala Gln Pro Lys Asn Leu Ser Asn Asp Lys Asp Leu Tyr
            20   25   30

Ser Arg Leu Leu Arg Gln Thr Ala Pro Lys Lys Lys Ser Thr Leu Lys
        35   40   45

Gln Ile Glu Lys Asp Leu Pro Arg Thr Phe Pro Glu Leu Pro Phe Phe
    50   55   60

Gln Phe Lys Gly Pro Gly Gln Glu Ser Leu Arg Arg Val Leu Lys Ala
65   70   75   80

Tyr Ser Ile Tyr Asn Pro Glu Val Gly Tyr Cys Gln Gly Met Asn Phe
                85   90   95

Leu Ala Ala Pro Leu Leu Leu Val Met Pro Asp Glu Glu Asp Ala Phe
            100   105   110

Trp Cys Leu Val Lys Leu Met Glu Arg Tyr Leu Pro Asn Phe Tyr Leu
        115   120   125

Pro Asp Leu Ser Gly Leu His Ala Asp Gln Leu Val Leu Asp Ser Leu
    130   135   140

Leu Gln Glu Tyr Leu Pro Asp Leu Tyr Lys His Leu Gln Glu Lys Gly

                            223

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145                 150                 155                 160

Ile Asp Pro Ser Leu Tyr Ala Leu Arg Trp Phe Leu Thr Leu Phe Ala
                165                 170                 175

Arg Glu Leu Pro Leu Glu Ile Val Leu Arg Ile Trp Asp Val Leu Phe
            180                 185                 190

Ala Glu Gly Ser Glu Phe Leu Phe Arg Ile Ala Leu Ala Ile Leu Lys
        195                 200                 205

Leu


<210> 140
<211> 207
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: TBC domain
      sequence

<400> 140
Gly Gly Val Pro Ser Ser Leu Arg Gly Tyr Val Trp Lys Leu Leu Leu
  1                 5                 10                 15

Gly Ala Gln Glu Leu Asn Asn Asp Lys Asp Glu Tyr Ile Glu Leu Leu
            20                 25                 30

Asn Lys His Lys Pro Glu Thr Val Gln Asp Gln Leu Asp Gln Ile Glu
        35                 40                 45

Lys Asp Leu Ser Arg Thr Phe Pro Asp Asp Ile Phe Phe His Ser Asn
    50                 55                 60

Glu Pro Pro Ser Ile Ala Gln Leu Arg Arg Leu Leu Arg Ala Tyr Ser
65                 70                 75                 80

Trp Lys Asn Pro Asp Leu Gly Tyr Val Gln Gly Met Asn Asp Ile Leu
                85                 90                 95

Ser Pro Leu Leu Leu Phe Leu Lys Asp Glu Glu Gln Ala Phe Trp Cys
            100                 105                 110

Phe Thr Lys Leu Met Asp Asn Tyr Leu Pro Gln Tyr Phe Thr Asn Asp
        115                 120                 125

                              224
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Leu Ser Gly Ser Asn Glu Asp Leu Arg Val Leu Asp Ser Leu Val Lys
    130   135   140

Glu Ser Leu Pro Glu Leu Tyr Ser His Leu Lys Lys Gln Gly Ser Thr
145   150   155   160

Leu Leu Ile Phe Ala Phe Pro Trp Phe Leu Thr Leu Phe Ala Arg Glu
                165   170   175

Leu Pro Leu Glu Ile Val Leu Arg Ile Trp Asp Met Leu Phe Thr Tyr
            180   185   190

Gly Ser His Phe Leu Ile Phe Val Ala Leu Ala Ile Leu Lys Leu
        195   200   205

<210> 141
<211> 558
<212> PRT
<213> Homo sapiens

<400> 141
Ala Val Arg Ala Asp Leu Pro Arg Pro Glu Val Ala Pro Leu Arg Gly
 1   5   10   15

Leu Pro Arg Pro Lys Phe Ser Ala Pro Arg Gly Leu Arg Ala Pro Arg
            20   25   30

Ser Pro Arg Pro Glu Val Ser Ala Arg Thr Met Arg Leu Gly Ser Pro
        35   40   45

Gly Leu Leu Phe Leu Leu Phe Ser Ser Leu Arg Ala Asp Thr Gln Glu
    50   55   60

Lys Glu Val Arg Ala Met Val Gly Ser Asp Val Glu Leu Ser Cys Ala
 65   70   75   80

Cys Pro Glu Gly Ser Arg Phe Asp Leu Asn Asp Val Tyr Val Tyr Trp
                85   90   95

Gln Thr Ser Glu Ser Lys Thr Val Val Thr Tyr His Ile Pro Gln Asn
            100   105   110

Ser Ser Leu Glu Asn Val Asp Ser Arg Tyr Arg Asn Arg Ala Leu Met
        115   120   125

Ser Pro Ala Gly Met Leu Arg Gly Asp Phe Ser Leu Arg Leu Phe Asn
                        225

Val Thr Pro Gln Asp Glu Gln Lys Phe His Cys Leu Val Leu Ser Gln
145   150   155   160

Ser Leu Gly Phe Gln Glu Val Leu Ser Val Glu Val Thr Leu His Val
                    165   170   175

Ala Ala Asn Phe Ser Val Pro Val Val Ser Ala Pro His Ser Pro Ser
                180   185   190

Gln Asp Glu Leu Thr Phe Thr Cys Thr Ser Ile Asn Gly Tyr Pro Arg
        195   200   205

Pro Asn Val Tyr Trp Ile Asn Lys Thr Asp Asn Ser Leu Leu Asp Gln
        210   215   220

Ala Leu Gln Asn Asp Thr Val Phe Leu Asn Met Arg Gly Leu Tyr Asp
225   230   235   240

Val Val Ser Val Leu Arg Ile Ala Arg Thr Pro Ser Val Asn Ile Gly
                245   250   255

Cys Cys Ile Glu Asn Val Leu Leu Gln Gln Asn Leu Thr Val Gly Ser
            260   265   270

Gln Thr Gly Asn Asp Ile Gly Glu Arg Asp Lys Ile Thr Glu Asn Pro
        275   280   285

Val Ser Thr Gly Glu Lys Asn Ala Ala Thr Trp Ser Ile Leu Ala Val
        290   295   300

Leu Cys Leu Leu Val Val Val Ala Val Ala Ile Gly Trp Val Cys Arg
305   310   315   320

Asp Arg Cys Leu Gln His Ser Tyr Ala Gly Ala Trp Ala Val Ser Pro
                325   330   335

Glu Thr Glu Leu Thr Gly Glu Phe Ala Val Gly Ser Ser Arg Phe Trp
            340   345   350

Gly Ala Gln Gly Arg Leu Gly Cys Gln Leu Ser Phe Arg Val Ser Lys
        355   360   365

Asn Phe Gln Lys Ala Lys Val Pro Cys Leu Glu Gln Leu Leu Phe Leu
    370   375   380

Glu Thr Gln Arg Ser Pro Arg Trp Cys Ala Arg His Phe Leu Gln Pro

385   390   395   400

Pro Leu Gly Met Gly Trp His Pro Gly Val His Phe Val Thr Leu Arg
                   405   410   415

Trp Asp Phe Pro Asn Met His Arg Ser Arg Glu Thr Ser Ala Arg Pro
              420   425   430

Pro Arg Ser Pro Val Pro Ser Pro Asp Gln Gly Val Gln Gly Gly Ser
           435   440   445

Arg His Arg Arg Pro Ala Pro Met Gly Cys Pro Glu Trp Val Gln Ala
     450   455   460

Pro Ala Pro Ser Pro Arg Gly Val Ser Arg Ala Gly Pro Gly Thr Gly
465   470   475   480

Ala Gln Pro Pro Trp Gly Val Gln Gly Gly Ser Arg His Arg Arg Pro
                   485   490   495

Ala Pro Met Gly Cys Pro Glu Trp Val Gln Ala Pro Ala Pro Ser Pro
           500   505   510

Arg Gly Val Ser Arg Ala Gly Pro Gly Thr Gly Ala Gln Pro Leu Trp
     515   520   525

Gly Val Trp Ser Gly Ser Gly His Arg Gln Leu Leu Ser Val Ala Ala
     530   535   540

Thr Pro Ala Ala Leu Val Cys Pro Ser Val Pro Gly Ala Thr
545   550   555

<210> 142
<211> 302
<212> PRT
<213> Homo sapiens

<400> 142
Met Arg Leu Gly Ser Pro Gly Leu Leu Phe Leu Leu Phe Ser Ser Leu
    1   5   10   15

Arg Ala Asp Thr Gln Glu Lys Glu Val Arg Ala Met Val Gly Ser Asp
              20   25   30

Val Glu Leu Ser Cys Ala Cys Pro Glu Gly Ser Arg Phe Asp Leu Asn
         35   40   45

227

Asp Val Tyr Val Tyr Trp Gln Thr Ser Glu Ser Lys Thr Val Val Thr
    50   55   60

Tyr His Ile Pro Gln Asn Ser Ser Leu Glu Asn Val Asp Ser Arg Tyr
 65   70   75   80

Arg Asn Arg Ala Leu Met Ser Pro Ala Gly Met Leu Arg Gly Asp Phe
                85   90   95

Ser Leu Arg Leu Phe Asn Val Thr Pro Gln Asp Glu Gln Lys Phe His
            100   105   110

Cys Leu Val Leu Ser Gln Ser Leu Gly Phe Gln Glu Val Leu Ser Val
        115   120   125

Glu Val Thr Leu His Val Ala Ala Asn Phe Ser Val Pro Val Val Ser
    130   135   140

Ala Pro His Ser Pro Ser Gln Asp Glu Leu Thr Phe Thr Cys Thr Ser
145   150   155   160

Ile Asn Gly Tyr Pro Arg Pro Asn Val Tyr Trp Ile Asn Lys Thr Asp
                165   170   175

Asn Ser Leu Leu Asp Gln Ala Leu Gln Asn Asp Thr Val Phe Leu Asn
            180   185   190

Met Arg Gly Leu Tyr Asp Val Val Ser Val Leu Arg Ile Ala Arg Thr
    195   200   205

Pro Ser Val Asn Ile Gly Cys Cys Ile Glu Asn Val Leu Leu Gln Gln
    210   215   220

Asn Leu Thr Val Gly Ser Gln Thr Gly Asn Asp Ile Gly Glu Arg Asp
225   230   235   240

Lys Ile Thr Glu Asn Pro Val Ser Thr Gly Glu Lys Asn Ala Ala Thr
                245   250   255

Trp Ser Ile Leu Ala Val Leu Cys Leu Leu Val Val Val Ala Val Ala
            260   265   270

Ile Gly Trp Val Cys Arg Asp Arg Cys Leu Gln His Ser Tyr Ala Gly
        275   280   285

Ala Trp Ala Val Ser Pro Glu Thr Glu Leu Thr Gly His Val
    290   295   300

<210> 143
<211> 309
<212> PRT
<213> Homo sapiens

<400> 143

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Met Arg Leu Gly Ser Pro Gly Leu Leu Phe Leu Leu Phe Ser Ser Leu
1               5                   10                  15

Arg Ala Asp Thr Gln Glu Lys Glu Val Arg Ala Met Val Gly Ser Asp
            20                  25                  30

Val Glu Leu Ser Cys Ala Cys Pro Glu Gly Ser Arg Phe Asp Leu Asn
        35                  40                  45

Asp Val Tyr Val Tyr Trp Gln Thr Ser Glu Ser Lys Thr Val Val Thr
    50                  55                  60

Tyr His Ile Pro Gln Asn Ser Ser Leu Glu Asn Val Asp Ser Arg Tyr
65                  70                  75                  80

Arg Asn Arg Ala Leu Met Ser Pro Ala Gly Met Leu Arg Gly Asp Phe
                85                  90                  95

Ser Leu Arg Leu Phe Asn Val Thr Pro Gln Asp Glu Gln Lys Phe His
            100                 105                 110

Cys Leu Val Leu Ser Gln Ser Leu Gly Phe Gln Glu Val Leu Ser Val
        115                 120                 125

Glu Val Thr Leu His Val Ala Ala Asn Phe Ser Val Pro Val Val Ser
    130                 135                 140

Ala Pro His Ser Pro Ser Gln Asp Glu Leu Thr Phe Thr Cys Thr Ser
145                 150                 155                 160

Ile Asn Gly Tyr Pro Arg Pro Asn Val Tyr Trp Ile Asn Lys Thr Asp
                165                 170                 175

Asn Ser Leu Leu Asp Gln Ala Leu Gln Asn Asp Thr Val Phe Leu Asn
            180                 185                 190

Met Arg Gly Leu Tyr Asp Val Val Ser Val Leu Arg Ile Ala Arg Thr
        195                 200                 205

Pro Ser Val Asn Ile Gly Cys Cys Ile Glu Asn Val Leu Leu Gln Gln
    210                 215                 220
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229

Asn Leu Thr Val Gly Ser Gln Thr Gly Asn Asp Ile Gly Glu Arg Asp
225   230   235   240

Lys Ile Thr Glu Asn Pro Val Ser Thr Gly Glu Lys Asn Ala Ala Thr
                245   250   255

Trp Ser Ile Leu Ala Val Leu Cys Leu Leu Val Val Val Ala Val Ala
            260   265   270

Ile Gly Trp Val Cys Arg Asp Arg Cys Leu Gln His Ser Tyr Ala Gly
        275   280   285

Ala Trp Ala Val Ser Pro Glu Thr Glu Leu Thr Glu Ser Trp Asn Leu
        290   295   300

Leu Leu Leu Leu Ser
305

<210> 144
<211> 322
<212> PRT
<213> Mus musculus

<400> 144
Met Gln Leu Lys Cys Pro Cys Phe Val Ser Leu Gly Thr Arg Gln Pro
1   5   10   15

Val Trp Lys Lys Leu His Val Ser Ser Gly Phe Phe Ser Gly Leu Gly
            20   25   30

Leu Phe Leu Leu Leu Leu Ser Ser Leu Cys Ala Ala Ser Ala Glu Thr
        35   40   45

Glu Val Gly Ala Met Val Gly Ser Asn Val Val Leu Ser Cys Ile Asp
        50   55   60

Pro His Arg Arg His Phe Asn Leu Ser Gly Leu Tyr Val Tyr Trp Gln
    65   70   75   80

Ile Glu Asn Pro Glu Val Ser Val Thr Tyr Tyr Leu Pro Tyr Lys Ser
                85   90   95

Pro Gly Ile Asn Val Asp Ser Ser Tyr Lys Asn Arg Gly His Leu Ser
            100   105   110

Leu Asp Ser Met Lys Gln Gly Asn Phe Ser Leu Tyr Leu Lys Asn Val

115   120   125
Thr Pro Gln Asp Thr Gln Glu Phe Thr Cys Arg Val Phe Met Asn Thr
    130   135   140

Ala Thr Glu Leu Val Lys Ile Leu Glu Glu Val Val Arg Leu Arg Val
145   150   155   160

Ala Ala Asn Phe Ser Thr Pro Val Ile Ser Thr Ser Asp Ser Ser Asn
                165   170   175

Pro Gly Gln Glu Arg Thr Tyr Thr Cys Met Ser Lys Asn Gly Tyr Pro
            180   185   190

Glu Pro Asn Leu Tyr Trp Ile Asn Thr Thr Asp Asn Ser Leu Ile Asp
        195   200   205

Thr Ala Leu Gln Asn Asn Thr Val Tyr Leu Asn Lys Leu Gly Leu Tyr
    210   215   220

Asp Val Ile Ser Thr Leu Arg Leu Pro Trp Thr Ser Arg Gly Asp Val
225   230   235   240

Leu Cys Cys Val Glu Asn Val Ala Leu His Gln Asn Ile Thr Ser Ile
                245   250   255

Ser Gln Ala Glu Ser Phe Thr Gly Asn Asn Thr Lys Asn Pro Gln Glu
            260   265   270

Thr His Asn Asn Glu Leu Lys Val Leu Val Pro Val Leu Ala Val Leu
        275   280   285

Ala Ala Ala Ala Phe Val Ser Phe Ile Ile Tyr Arg Arg Thr Arg Pro
    290   295   300

His Arg Ser Tyr Thr Gly Pro Lys Thr Val Gln Leu Glu Leu Thr Asp
305   310   315   320

His Ala

    <210> 145
    <211> 347
    <212> PRT
    <213> Mus musculus

    <400> 145
                        231

Met Gln Leu Lys Cys Pro Cys Phe Val Ser Leu Gly Thr Arg Gln Pro
1   5   10   15

Val Trp Lys Lys Leu His Val Ser Ser Gly Phe Phe Ser Gly Leu Gly
              20   25   30

Leu Phe Leu Leu Leu Leu Ser Ser Leu Cys Ala Ala Ser Ala Glu Thr
        35   40   45

Glu Val Gly Ala Met Val Gly Ser Asn Val Val Leu Ser Cys Ile Asp
    50   55   60

Pro His Arg Arg His Phe Asn Leu Ser Gly Leu Tyr Val Tyr Trp Gln
65   70   75   80

Ile Glu Asn Pro Glu Val Ser Val Thr Tyr Tyr Leu Pro Tyr Lys Ser
                85   90   95

Pro Gly Ile Asn Val Asp Ser Ser Tyr Lys Asn Arg Gly His Leu Ser
            100   105   110

Leu Asp Ser Met Lys Gln Gly Asn Phe Ser Leu Tyr Leu Lys Asn Val
        115   120   125

Thr Pro Gln Asp Thr Gln Glu Phe Thr Cys Arg Val Phe Met Asn Thr
    130   135   140

Ala Thr Glu Leu Val Lys Ile Leu Glu Glu Val Val Arg Leu Arg Val
145   150   155   160

Ala Ala Asn Phe Ser Thr Pro Val Ile Ser Thr Ser Asp Ser Ser Asn
            165   170   175

Pro Gly Gln Glu Arg Thr Tyr Thr Cys Met Ser Lys Asn Gly Tyr Pro
            180   185   190

Glu Pro Asn Leu Tyr Trp Ile Asn Thr Thr Asp Asn Ser Leu Ile Asp
        195   200   205

Thr Ala Leu Gln Asn Asn Thr Val Tyr Leu Asn Lys Leu Gly Leu Tyr
    210   215   220

Asp Val Ile Ser Thr Leu Arg Leu Pro Trp Thr Ser His Gly Asp Val
225   230   235   240

Leu Cys Cys Val Glu Asn Val Ala Leu His Gln Asn Ile Thr Ser Ile
            245   250   255

232

Ser Gln Ala Glu Ser Phe Thr Gly Asn Asn Thr Lys Asn Pro Gln Glu
            260   265   270

Thr His Asn Asn Glu Leu Lys Val Leu Val Pro Val Leu Ala Val Leu
        275   280   285

Ala Ala Ala Ala Phe Val Ser Phe Ile Ile Tyr Arg Arg Thr Arg Pro
    290   295   300

His Arg Ser Tyr Thr Gly Pro Lys Thr Val Gln Leu Glu Leu Thr Asp
305   310   315   320

Thr Trp Ala Pro Val Pro Tyr Gln Asp Tyr Leu Ile Pro Arg Tyr Leu
                325   330   335

Met Ser Pro Cys Leu Lys Thr Arg Gly Leu Pro
            340   345

<210> 146
<211> 80
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: IGv,
        Immunoglobulin V-Type domain sequence

<400> 146
Ser Val Thr Leu Ser Cys Lys Ala Ser Gly Phe Thr Phe Ser Ser Tyr
1   5   10   15

Tyr Val Ser Trp Val Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Leu
                20   25   30

Gly Tyr Ile Gly Ser Asp Val Ser Tyr Ser Glu Ala Ser Tyr Lys Gly
            35   40   45

Arg Val Thr Ile Ser Lys Asp Asn Ser Lys Asn Asp Val Ser Leu Thr
        50   55   60

Ile Ser Asn Leu Arg Val Glu Asp Thr Gly Thr Tyr Tyr Cys Ala Val
    65   70   75   80

233

<210> 147
<211> 377
<212> PRT
<213> Homo sapiens

<400> 147
Met Arg Ser Ala Thr Ala Arg Pro Arg Arg Arg Ala Arg Arg Glu Gly
1   5   10   15

Glu Gly Gly Arg His Arg Gly Pro Pro Pro Asp Pro Ala Arg Ser Ser
            20   25   30

Tyr Pro Thr Arg Val Gln Pro Arg Arg Pro Thr Lys Gly Thr His Arg
        35   40   45

Arg Arg Pro Arg Leu Arg Asp Pro Phe Asp Phe Ala Arg Tyr Leu Arg
    50   55   60

Ala Lys Asp Gln Arg Arg Phe Pro Leu Leu Ile Asn Gln Pro His Lys
65   70   75   80

Cys Arg Gly Asp Gly Ala Pro Gly Gly Arg Pro Asp Leu Leu Ile Ala
            85   90   95

Val Lys Ser Val Ala Glu Asp Phe Glu Arg Arg Gln Ala Val Arg Gln
            100   105   110

Thr Trp Gly Ala Glu Gly Arg Val Gln Gly Ala Leu Val Arg Arg Val
        115   120   125

Phe Leu Leu Gly Val Pro Arg Gly Ala Gly Ser Gly Gly Ala Asp Glu
    130   135   140

Val Gly Glu Gly Ala Arg Thr His Trp Arg Ala Leu Leu Arg Ala Glu
145   150   155   160

Ser Leu Ala Tyr Ala Asp Ile Leu Leu Trp Ala Phe Asp Asp Thr Phe
            165   170   175

Phe Asn Leu Thr Leu Lys Glu Ile His Phe Leu Ala Trp Ala Ser Ala
            180   185   190

Phe Cys Pro Asp Val Arg Phe Val Phe Lys Gly Asp Ala Asp Val Phe
        195   200   205

Val Asn Val Gly Asn Leu Leu Glu Phe Leu Ala Pro Arg Asp Pro Ala
    210   215   220

234

Gln Asp Leu Leu Ala Gly Asp Val Ile Val His Ala Arg Pro Ile Arg
225   230   235   240

Thr Arg Ala Ser Lys Tyr Tyr Ile Pro Glu Ala Val Tyr Gly Leu Pro
                245   250   255

Ala Tyr Pro Ala Tyr Ala Gly Gly Gly Gly Phe Val Leu Ser Gly Ala
            260   265   270

Thr Leu His Arg Leu Ala Gly Ala Cys Ala Gln Val Glu Leu Phe Pro
        275   280   285

Ile Asp Asp Val Phe Leu Gly Met Cys Leu Gln Arg Leu Arg Leu Thr
    290   295   300

Pro Glu Pro His Pro Ala Phe Arg Thr Phe Gly Ile Pro Gln Pro Ser
305   310   315   320

Ala Ala Pro His Leu Ser Thr Phe Asp Pro Cys Phe Tyr Arg Glu Leu
                325   330   335

Val Val Val His Gly Leu Ser Ala Ala Asp Ile Trp Leu Met Trp Arg
            340   345   350

Leu Leu His Gly Pro His Gly Pro Ala Cys Ala His Pro Gln Pro Val
        355   360   365

Ala Ala Gly Pro Phe Gln Trp Asp Ser
    370   375

<210> 148
<211> 399
<212> PRT
<213> Mus musculus

<400> 148
Met Arg Arg Arg Arg Arg Pro Arg Leu Cys Pro Asp Ala Trp Leu Thr
    1   5   10   15

Leu Leu Leu Ser Ala Ala Leu Gly Leu Leu Leu Tyr Ala Gln Arg Asp
                20   25   30

Val Ala Ser Pro Thr Thr Arg Pro Pro Ala Arg Gly Pro Gln Leu Pro
        35   40   45

Arg Pro Thr Pro Ser Leu Arg Ala Arg Glu Leu Pro Asn Thr Ala Arg
        50   55   60

235

Ala Ala Pro Leu Ala Tyr Glu Gly Asp Thr Pro Val Pro Pro Thr Pro
65   70   75   80

Thr Asp Pro Phe Asp Phe Gly Gly Tyr Leu Arg Ala Lys Asp Gln Arg
            85   90   95

Arg Phe Pro Leu Leu Ile Asn Gln Arg Arg Lys Cys Arg Ser Asp Gly
            100   105   110

Ala Ser Gly Gly Ser Pro Asp Leu Leu Ile Ala Val Lys Ser Val Ala
            115   120   125

Ala Asp Phe Glu Arg Arg Glu Ala Val Arg Gln Thr Trp Gly Ala Glu
            130   135   140

Gly Arg Val Gln Gly Ala Leu Val Arg Arg Val Phe Leu Leu Gly Val
145   150   155   160

Pro Lys Gly Ala Gly Ser Gly Gly Ala Gly Thr Arg Ser His Trp Arg
            165   170   175

Thr Leu Leu Glu Ala Glu Ser Arg Ala Tyr Ala Asp Ile Leu Leu Trp
            180   185   190

Ala Phe Glu Asp Thr Phe Phe Asn Leu Thr Leu Lys Glu Ile His Phe
            195   200   205

Leu Ser Trp Ala Ser Ala Phe Cys Pro Asp Val His Phe Val Phe Lys
            210   215   220

Gly Asp Ala Asp Val Phe Val His Val Arg Asn Leu Leu Gln Phe Leu
225   230   235   240

Glu Leu Arg Asp Pro Ala Gln Asp Leu Leu Ala Gly Asp Val Ile Val
            245   250   255

Gln Ala Arg Pro Ile Arg Ala Arg Ala Ser Lys Tyr Phe Ile Pro Arg
            260   265   270

Ala Val Tyr Gly Leu Pro Val Tyr Pro Ala Tyr Ala Gly Gly Gly Gly
            275   280   285

Phe Val Leu Ser Gly Ala Thr Leu Arg Arg Leu Ala Asp Ala Cys Ser
            290   295   300

Gln Val Glu Leu Phe Pro Ile Asp Asp Val Phe Leu Gly Met Cys Leu
305   310   315   320

236

Gln Arg Leu Arg Leu Thr Pro Glu Pro His Pro Ala Phe Arg Thr Phe
                325   330   335

Gly Ile Ser Gln Pro Ser Ala Ala Pro His Leu Arg Thr Phe Asp Pro
            340   345   350

Cys Phe Tyr Arg Glu Leu Val Val Val His Gly Leu Ser Ala Ala Asp
        355   360   365

Ile Trp Leu Met Trp Arg Leu Leu His Gly Pro Gln Gly Pro Val Cys
    370   375   380

Ala His Pro Gln Pro Val Ala Thr Gly Pro Phe Gln Trp Asn Ser
385   390   395

<210> 149
<211> 418
<212> PRT
<213> Danio rerio

<400> 149
Met Glu Phe Thr Ser Leu Leu Thr Asp Tyr Arg Met Thr Thr Arg Glu
1   5   10   15

Arg Trp Arg Val Tyr Lys Arg Val Ser Leu Met Phe Leu Leu Ala Val
            20   25   30

Val Thr Leu Thr Val Val His Arg Gly Asn Leu Thr Ser Leu Gln Asp
        35   40   45

Phe Gln Thr Asp His Ile Glu Arg Gln Thr Arg Met Glu Leu Thr Ala
    50   55   60

Asp Ser Glu Val Gln Lys Lys Ala Thr Val Asn Phe Trp Lys Thr Ile
65   70   75   80

Gln Arg Leu Gln Ser Thr Thr Gln Gly Ser Arg Ile Thr Leu Lys Gln
            85   90   95

Ala Pro Ser Thr Trp Asp Val Asp Ser Ser Asn Cys Ser Ile Asn Leu
        100   105   110

Phe Asn Ser Ser Gln Glu Trp Phe Thr Gly Pro Glu Asp Asn Phe Lys
    115   120   125

Gln Phe Leu Leu Tyr Arg His Cys Arg Tyr Phe Pro Met Leu Ile Asn
                        237

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                130                   135                    140
His Pro Glu Lys Cys Ser Gly Glu Ile Asp Leu Leu Ile Val Ile Lys
145                   150                   155                   160
Ser Val Ile Thr Gln Phe Asp Arg Arg Glu Val Ile Arg Lys Thr Trp
                165                   170                   175
Gly Lys Glu Gln Val Leu Asn Gly Lys Arg Ile Lys Thr Leu Phe Leu
            180                   185                   190
Leu Gly Lys Ser Ser Asn Leu Glu Glu Arg Ala Asn His Gln Lys Leu
        195                   200                   205
Leu Glu Tyr Glu Asp Tyr Ile Tyr Gly Asp Thr Leu Gln Trp Asp Phe
    210                   215                   220
Met Asp Ser Phe Phe Asn Leu Thr Leu Lys Glu Ile His Phe Leu Lys
225                   230                   235                   240
Trp Phe Ser Ser Tyr Cys Pro Lys Thr Gln Tyr Ile Phe Lys Gly Asp
            245                   250                   255
Asp Asp Val Phe Val Ser Val Pro Asn Ile Phe Glu Tyr Leu Glu Ile
            260                   265                   270
Ser Gly Asn Leu Lys Asp Leu Phe Val Gly Asp Val Leu Phe Lys Ala
        275                   280                   285
Lys Pro Ile Arg Lys Glu Gln Asn Lys Tyr Tyr Ile Pro Gln Ala Leu
    290                   295                   300
Tyr Asn Lys Thr Leu Tyr Pro Pro Tyr Ala Gly Gly Gly Gly Phe Leu
305                   310                   315                   320
Met Asp Gly Ala Leu Ala Arg Lys Leu Tyr Gly Ala Cys Glu Thr Leu
                325                   330                   335
Glu Leu Tyr Pro Ile Asp Asp Val Phe Leu Gly Met Cys Leu Glu Val
            340                   345                   350
Leu Gln Val Thr Pro Ile Lys His Asn Ala Phe Lys Thr Phe Gly Leu
        355                   360                   365
Val Lys Asn Lys Thr Ser Arg Leu Asn Arg Glu Pro Cys Phe Phe Lys
    370                   375                   380
Ser Leu Ile Val Val His Lys Leu Leu Pro Pro Asp Leu Met Ser Met
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238

Trp Lys Leu Val Asn Ser Asp Leu Ile Cys Ser Gln Lys Ile Asp Phe
                405   410   415

Leu Asp

<210> 150
<211> 412
<212> PRT
<213> Danio rerio

<400> 150
Met Glu Cys Arg Ser Ala Cys Val Thr Glu Phe Phe Cys Arg Lys Lys
1   5   10   15

Lys Asn Val Lys Thr Ala Val Ser Leu Thr Leu Leu Phe Ala Thr Leu
                20   25   30

Leu Met Leu Gln Lys Leu Ile Thr Val Asp Thr Asn Ser Lys Asp Lys
        35   40   45

Lys Val Glu Val Lys Gly Arg Trp Cys Gly Pro Gln Cys Pro Ser Phe
        50   55   60

Lys Ser Lys Asn Leu Lys Ala Val Glu Asn Ser Ser His Ser Gly Gly
65   70   75   80

Ser Asp Ser Lys Arg Ala Phe Lys Pro Leu Pro Lys Lys Trp Asp Val
                85   90   95

Asn Lys Ile Thr Cys Thr Glu Asn Ser Thr Ile Lys Thr Gln Leu Trp
                100   105   110

Phe Arg Arg Leu Ser Pro Arg Phe His Glu Phe Val Leu His Arg His
        115   120   125

Cys Arg Tyr Phe Pro Met Leu Leu Asn His Pro Glu Lys Cys Gly Gly
        130   135   140

Gly Val Asp Val Leu Val Val Val Lys Ser Val Ile Glu Glu His Asp
145   150   155   160

Arg Arg Glu Ala Val Arg Lys Thr Trp Gly Lys Glu Gln Glu Ile Gln
                165   170   175

239

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Gly Leu Lys Ile Lys Thr Leu Phe Leu Leu Gly Thr Pro Ala Pro Gly
            180                 185                 190

Lys Asp Ser Arg Asn Leu Gln Ala Leu Val Gln Tyr Glu Asp Arg Thr
            195                 200                 205

Tyr Gly Asp Ile Leu Gln Trp Asp Phe Met Asp Thr Phe Phe Asn Leu
    210                 215                 220

Thr Leu Lys Glu Val Asn Phe Leu Arg Trp Phe Ser Ile Tyr Cys Pro
225                 230                 235                 240

Asp Val Pro Phe Ile Phe Lys Gly Asp Asp Asp Val Phe Val His Thr
            245                 250                 255

Lys Asn Leu Val Glu Leu Ile Gly Phe Arg Lys Glu Glu Asn Lys Val
            260                 265                 270

Glu Asn Leu Ile Val Gly Asp Ala Ile Leu Glu Ala Lys Pro Ile Arg
            275                 280                 285

Asn Arg Gln Ser Lys Tyr Phe Ile Pro Arg Glu Leu Tyr Asp Lys Arg
    290                 295                 300

Tyr Pro Pro Tyr Leu Gly Gly Gly Gly Phe Leu Met Ser Ser Gln Val
305                 310                 315                 320

Ala Arg Lys Val Phe Thr Val Ser Glu Ser Val Glu Leu Tyr Pro Ile
            325                 330                 335

Asp Asp Val Phe Val Gly Met Cys Leu Gln Lys Leu Asn Ile Val Pro
            340                 345                 350

Glu Val His Leu Gly Phe Arg Thr Phe Gly Ile Ile Lys Arg Lys Val
            355                 360                 365

Thr Arg Leu Asn Arg Glu Pro Cys Phe Phe Arg Asp Leu Ile Val Val
    370                 375                 380

His Lys Leu Val Pro Gln Asp Leu Leu Lys Met Trp Thr Leu Val Gln
385                 390                 395                 400

Asn Glu Asp Leu Ser Cys Ala Arg Gln Phe Val Leu
            405                 410


<210> 151
<211> 397

                              240
```

<212> PRT
<213> Mus musculus

<400> 151
Met Ser Val Gly Arg Arg Arg Val Lys Leu Leu Gly Ile Leu Met Met
 1   5   10   15

Ala Asn Val Phe Ile Tyr Leu Ile Val Glu Val Ser Lys Asn Ser Ser
            20   25   30

Gln Asp Lys Asn Gly Lys Gly Gly Val Ile Ile Pro Lys Glu Lys Phe
        35   40   45

Trp Lys Pro Pro Ser Thr Pro Arg Ala Tyr Trp Asn Arg Glu Gln Glu
    50   55   60

Lys Leu Asn Arg Trp Tyr Asn Pro Ile Leu Asn Arg Val Ala Asn Gln
65   70   75   80

Thr Gly Glu Leu Ala Thr Ser Pro Asn Thr Ser His Leu Ser Tyr Cys
            85   90   95

Glu Pro Asp Ser Thr Val Met Thr Ala Val Thr Asp Phe Asn Asn Leu
            100   105   110

Pro Asp Arg Phe Lys Asp Phe Leu Leu Tyr Leu Arg Cys Arg Asn Tyr
        115   120   125

Ser Leu Leu Ile Asp Gln Pro Lys Lys Cys Ala Lys Lys Pro Phe Leu
        130   135   140

Leu Leu Ala Ile Lys Ser Leu Ile Pro His Phe Ala Arg Arg Gln Ala
145   150   155   160

Ile Arg Glu Ser Trp Gly Arg Glu Thr Asn Val Gly Asn Gln Thr Val
            165   170   175

Val Arg Val Phe Leu Leu Gly Lys Thr Pro Pro Glu Asp Asn His Pro
        180   185   190

Asp Leu Ser Asp Met Leu Lys Phe Glu Ser Asp Lys His Gln Asp Ile
        195   200   205

Leu Met Trp Asn Tyr Arg Asp Thr Phe Phe Asn Leu Ser Leu Lys Glu
    210   215   220

Val Leu Phe Leu Arg Trp Val Ser Thr Ser Cys Pro Asp Ala Glu Phe
225   230   235   240

241

Val Phe Lys Gly Asp Asp Asp Val Phe Val Asn Thr His His Ile Leu
              245   250   255

Asn Tyr Leu Asn Ser Leu Ser Lys Ser Lys Ala Lys Asp Leu Phe Ile
              260   265   270

Gly Asp Val Ile His Asn Ala Gly Pro His Arg Asp Lys Lys Leu Lys
          275   280   285

Tyr Tyr Ile Pro Glu Val Phe Tyr Thr Gly Val Tyr Pro Pro Tyr Ala
      290   295   300

Gly Gly Gly Gly Phe Leu Tyr Ser Gly Pro Leu Ala Leu Arg Leu Tyr
305   310   315   320

Ser Ala Thr Ser Arg Val His Leu Tyr Pro Ile Asp Asp Val Tyr Thr
              325   330   335

Gly Met Cys Leu Gln Lys Leu Gly Leu Val Pro Glu Lys His Lys Gly
          340   345   350

Phe Arg Thr Phe Asp Ile Glu Glu Lys Asn Lys Lys Asn Ile Cys Ser
          355   360   365

Tyr Ile Asp Leu Met Leu Val His Ser Arg Lys Pro Gln Glu Met Ile
      370   375   380

Asp Ile Trp Ser Gln Leu Gln Ser Pro Asn Leu Lys Cys
385   390   395

<210> 152
<211> 194
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
      Galactosyltransferase domain sequence

<400> 152
Arg Arg Asn Ala Ile Arg Lys Thr Trp Met Asn Gln Asn Asn Ser Arg
  1   5   10   15

Gly Gly Arg Ile Lys Ser Leu Phe Leu Val Gly Leu Ala Ala Leu Asp
              20   25   30

242

Gly Lys Leu Lys Lys Leu Val Met Glu Glu Ala Arg Leu Tyr Gly Asp
          35   40   45

Ile Ile Val Val Asp Leu Glu Asp Ser Tyr Leu Asn Leu Thr Leu Lys
     50   55   60

Thr Leu Thr Ile Leu Leu Tyr Val Val Ser Lys Cys Pro Asn Ala Lys
 65   70   75   80

Leu Ile Gly Lys Ile Asp Asp Asp Val Phe Val Asn Pro Asp Asn Leu
                   85   90   95

Leu Ser Leu Leu Glu Arg Glu Tyr Ile Asp Pro Ser Pro Leu Ser Phe
               100   105   110

Tyr Gly Tyr Ile Ile Lys Asn Gly Glu Pro Val Arg Thr Lys Lys Ser
        115   120   125

Lys Trp Tyr Val Pro Pro Thr Ala Tyr Pro Cys Ser Asn Tyr Pro Pro
    130   135   140

Tyr Leu Ser Gly Pro Phe Tyr Ile Leu Ser Arg Asp Ala Ala Pro Leu
145   150   155   160

Ile Leu Lys Ala Ser Lys His Arg Arg Phe Ile Lys Ile Glu Asp Val
               165   170   175

Leu Ile Thr Gly Ile Leu Ala Leu Asp Leu Gly Ile Ser Arg Ile Asn
              180   185   190

Leu Pro

<210> 153
<211> 128
<212> PRT
<213> Homo sapiens

<400> 153
Met Arg Thr Ala Leu Leu Leu Leu Ala Ala Leu Ala Val Ala Thr Gly
 1   5   10   15

Pro Ala Leu Thr Leu Arg Cys His Val Cys Thr Ser Ser Ser Asn Cys
              20   25   30

Lys His Ser Val Val Cys Pro Ala Ser Ser Arg Phe Cys Lys Thr Thr
        35   40   45

243

Asn Thr Val Glu Pro Leu Arg Gly Asn Leu Val Lys Lys Asp Cys Ala
            50   55   60

Glu Ser Cys Thr Pro Ser Tyr Thr Leu Gln Gly Gln Val Ser Ser Gly
 65   70   75   80

Thr Ser Ser Thr Gln Cys Cys Gln Glu Asp Leu Cys Asn Glu Lys Leu
                85   90   95

His Asn Ala Ala Pro Thr Arg Thr Ala Leu Ala His Ser Ala Leu Ser
                100   105   110

Leu Gly Leu Ala Leu Ser Leu Leu Ala Val Ile Leu Ala Pro Ser Leu
            115   120   125

<210> 154
<211> 128
<212> PRT
<213> Homo sapiens

<400> 154
Met Arg Thr Ala Leu Leu Leu Leu Ala Thr Leu Ala Val Ala Thr Gly
  1   5   10   15

Pro Ala Leu Thr Leu Arg Cys His Val Cys Thr Ser Ser Ser Asn Cys
                20   25   30

Lys His Ser Val Val Cys Pro Ala Ser Ser Arg Phe Cys Lys Thr Thr
            35   40   45

Asn Thr Val Glu Pro Leu Arg Gly Asn Leu Val Lys Lys Asp Cys Ala
        50   55   60

Glu Ser Cys Thr Pro Ser Tyr Thr Leu Gln Gly Gln Val Ser Ser Gly
 65   70   75   80

Thr Ser Ser Thr Gln Cys Cys Gln Glu Asp Leu Cys Asn Glu Lys Leu
                85   90   95

His Asn Ala Ala Pro Thr Arg Thr Ala Leu Ala His Ser Ala Leu Ser
                100   105   110

Leu Gly Leu Ala Leu Ser Leu Leu Ala Val Ile Leu Ala Pro Ser Leu

<210> 155
<211> 130
<212> PRT
<213> Homo sapiens

<400> 155

```
Met Phe Arg Met Lys Thr Ala Leu Leu Val Leu Leu Val Leu Ala Val
1               5                   10                  15

Ala Thr Ser Pro Ala Trp Ala Leu Arg Cys His Val Cys Thr Asn Ser
            20                  25                  30

Ala Asn Cys Lys Asn Pro Gln Val Cys Pro Ser Asn Phe Tyr Phe Cys
        35                  40                  45

Lys Thr Val Thr Ser Val Glu Pro Leu Asn Gly Asn Leu Val Arg Lys
    50                  55                  60

Glu Cys Ala Asn Ser Cys Thr Ser Asp Tyr Ser Gln Gln Gly His Val
65                  70                  75                  80

Ser Ser Gly Ser Glu Val Thr Gln Cys Cys Gln Thr Asp Leu Cys Asn
                85                  90                  95

Glu Arg Leu Val Ser Ala Ala Pro Gly His Ala Leu Leu Ser Ser Val
            100                 105                 110

Thr Leu Gly Leu Ala Thr Ser Leu Ser Leu Leu Thr Val Met Ala Leu
        115                 120                 125

Cys Leu
    130
```

<210> 156
<211> 127
<212> PRT
<213> Homo sapiens

<400> 156

```
Met Lys Thr Ala Leu Leu Val Leu Leu Val Leu Ala Val Ala Thr Ser
1               5                   10                  15
```

```
Pro Ala Trp Ala Leu Arg Cys His Val Cys Thr Asn Ser Ala Asn Cys
                20                  25                  30

Lys Asn Pro Gln Val Cys Pro Ser Asn Phe Tyr Phe Cys Lys Thr Val
         35                  40                  45

Thr Ser Val Glu Pro Leu Asn Gly Asn Leu Val Arg Lys Glu Cys Ala
    50                  55                  60

Asn Ser Cys Thr Ser Asp Tyr Ser Gln Gln Gly His Val Ser Ser Gly
 65                  70                  75                  80

Ser Glu Val Thr Gln Cys Cys Gln Thr Asp Leu Cys Asn Glu Arg Leu
                85                  90                  95

Val Ser Ala Ala Pro Gly His Ala Leu Leu Ser Ser Val Thr Leu Gly
            100                 105                 110

Leu Ala Thr Ser Leu Ser Leu Leu Thr Val Met Ala Leu Cys Leu
        115                 120                 125
```

<210> 157
<211> 79
<212> PRT
<213> Homo sapiens

<400> 157
```
Ala Leu Thr Leu Arg Cys His Val Cys Thr Ser Ser Ser Asn Cys Lys
  1               5                  10                  15

His Ser Val Val Cys Pro Ala Ser Ser Arg Phe Cys Lys Thr Thr Asn
            20                  25                  30

Thr Val Glu Pro Leu Arg Gly Asn Leu Val Glu Lys Asp Cys Ala Glu
        35                  40                  45

Ser Cys Thr Pro Ser Tyr Thr Leu Gln Gly Leu Val Ser Ser Gly Thr
    50                  55                  60

Ser Ser Thr Gln Cys Cys Gln Glu Asp Leu Cys Asn Glu Lys Leu
 65                  70                  75
```

<210> 158
<211> 88
<212> PRT

                                    246

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Ly-6 antigen
     domain sequence

<400> 158
Gln Cys Tyr Ser Cys Thr Gly Asn Pro Asp Ser Ser Cys Ser Thr Glu
 1   5   10   15

Glu Cys Arg Ser Pro Asp Asp Val Cys Leu Thr Ala Val Ala Glu Val
            20   25   30

Ile Ser Gly Ser Arg Gly Ser Val Val Tyr Lys Gly Cys Ala Thr Ser
        35   40   45

Pro Ile Cys Pro Gly Ser His Gly Ile Glu Ile His Leu Thr Ile Ala
     50   55   60

Asn Val Ser Val Ser Cys Cys Gln Thr Asp Leu Cys Asn Ala Ala Gly
 65   70   75   80

Pro Thr Leu Gly Ser Thr Leu Thr
                85

<210> 159
<211> 388
<212> PRT
<213> Homo sapiens

<400> 159
Met Lys Trp Met Val Val Val Leu Val Cys Leu Gln Leu Leu Glu Ala
 1   5   10   15

Ala Val Val Lys Val Pro Leu Lys Lys Phe Lys Ser Ile Arg Glu Thr
            20   25   30

Met Lys Glu Lys Gly Leu Leu Gly Glu Phe Leu Arg Thr His Lys Tyr
        35   40   45

Asp Pro Ala Trp Lys Tyr Arg Phe Gly Asp Leu Ser Val Thr Tyr Glu
     50   55   60

Pro Met Ala Tyr Met Asp Ala Ala Tyr Phe Gly Glu Ile Ser Ile Gly
 65   70   75   80

Thr Pro Pro Gln Asn Phe Leu Val Leu Phe Asp Thr Gly Ser Ser Asn

```
                    85                      90                      95
Leu Trp Val Pro Ser Val Tyr Cys Gln Ser Gln Ala Cys Thr Ser His
              100                     105                     110
Ser Arg Phe Asn Pro Ser Glu Ser Ser Thr Tyr Ser Thr Asn Gly Gln
        115                     120                     125
Thr Phe Ser Leu Gln Tyr Gly Ser Gly Ser Leu Thr Gly Phe Phe Gly
      130                     135                     140
Tyr Asp Thr Leu Thr Val Gln Ser Ile Gln Val Pro Asn Gln Glu Phe
145                     150                     155                     160
Gly Leu Ser Glu Asn Glu Pro Gly Thr Asn Phe Val Tyr Ala Gln Phe
                  165                     170                     175
Asp Gly Ile Met Gly Leu Ala Tyr Pro Ala Leu Ser Val Asp Glu Ala
              180                     185                     190
Thr Thr Ala Met Gln Gly Met Val Gln Glu Gly Ala Leu Thr Ser Pro
          195                     200                     205
Val Phe Ser Val Tyr Leu Ser Asn Gln Gln Gly Ser Ser Gly Gly Ala
    210                     215                     220
Val Val Phe Gly Gly Val Asp Ser Ser Leu Tyr Thr Gly Gln Ile Tyr
                  230                     235                     240
225
Trp Ala Pro Val Thr Gln Glu Leu Tyr Trp Gln Ile Gly Ile Glu Glu
              245                     250                     255
Phe Leu Ile Gly Gly Gln Ala Ser Gly Trp Cys Ser Glu Gly Cys Gln
              260                     265                     270
Ala Ile Val Asp Thr Gly Thr Ser Leu Leu Thr Val Pro Gln Gln Tyr
          275                     280                     285
Met Ser Ala Leu Leu Gln Ala Thr Gly Ala Gln Glu Asp Glu Tyr Gly
    290                     295                     300
Gln Phe Leu Val Asn Cys Asn Ser Ile Gln Asn Leu Pro Ser Leu Thr
305                     310                     315                     320
Phe Ile Ile Asn Gly Val Glu Phe Pro Leu Pro Pro Ser Ser Tyr Ile
                  325                     330                     335
Leu Ser Asn Asn Gly Tyr Cys Thr Val Gly Val Glu Pro Thr Tyr Leu
```

```
                340              345                    350
Ser Ser Gln Asn Gly Gln Pro Leu Trp Ile Leu Gly Asp Val Phe Leu
                         355              360              365

Arg Ser Tyr Tyr Ser Val Tyr Asp Leu Gly Asn Asn Arg Val Gly Phe
    370              375              380

Ala Thr Ala Ala
385


<210> 160
<211> 385
<212> PRT
<213> Homo sapiens

<400> 160
Met Val Val Val Leu Val Cys Leu Gln Leu Leu Glu Ala Ala Val Val
  1               5                    10                    15

Lys Val Pro Leu Lys Lys Phe Lys Ser Ile Arg Glu Thr Met Lys Glu
            20                    25                    30

Lys Gly Leu Leu Gly Glu Phe Leu Arg Thr His Lys Tyr Asp Pro Ala
        35                    40                    45

Trp Lys Tyr Arg Phe Gly Asp Leu Ser Val Thr Tyr Glu Pro Met Ala
    50                    55                    60

Tyr Met Asp Ala Ala Tyr Phe Gly Glu Ile Ser Ile Gly Thr Pro Pro
  65                    70                    75                    80

Gln Asn Phe Leu Val Leu Phe Asp Thr Gly Ser Ser Asn Leu Trp Val
                85                    90                    95

Pro Ser Val Tyr Cys Gln Ser Gln Ala Cys Thr Ser His Ser Arg Phe
            100                    105                    110

Asn Pro Ser Glu Ser Ser Thr Tyr Ser Thr Asn Gly Gln Thr Phe Ser
        115                    120                    125

Leu Gln Tyr Gly Ser Gly Ser Leu Thr Gly Phe Phe Gly Tyr Asp Thr
    130                    135                    140

Leu Thr Val Gln Ser Ile Gln Val Pro Asn Gln Glu Phe Gly Leu Ser
  145                    150                    155                    160
```

249

Glu Asn Glu Pro Gly Thr Asn Phe Val Tyr Ala Gln Phe Asp Gly Ile
                165   170   175

Met Gly Leu Ala Tyr Pro Ala Leu Ser Val Asp Glu Ala Thr Thr Ala
            180   185   190

Met Gln Gly Met Val Gln Glu Gly Ala Leu Thr Ser Pro Val Phe Ser
         195   200   205

Val Tyr Leu Ser Asn Gln Gln Gly Ser Ser Gly Gly Ala Val Val Phe
    210   215   220

Gly Gly Val Asp Ser Ser Leu Tyr Thr Gly Gln Ile Tyr Trp Ala Pro
225   230   235   240

Val Thr Gln Glu Leu Tyr Trp Gln Ile Gly Ile Glu Glu Phe Leu Ile
                245   250   255

Gly Gly Gln Ala Ser Gly Trp Cys Ser Glu Gly Cys Gln Ala Ile Val
            260   265   270

Asp Thr Gly Thr Ser Leu Leu Thr Val Pro Gln Gln Tyr Met Ser Ala
         275   280   285

Leu Leu Gln Ala Thr Gly Ala Gln Glu Asp Glu Tyr Gly Gln Phe Leu
    290   295   300

Val Asn Cys Asn Ser Ile Gln Asn Leu Pro Ser Leu Thr Phe Ile Ile
305   310   315   320

Asn Gly Val Glu Phe Pro Leu Pro Pro Ser Ser Tyr Ile Leu Ser Asn
                325   330   335

Asn Gly Tyr Cys Thr Val Gly Val Glu Pro Thr Tyr Leu Ser Ser Gln
            340   345   350

Asn Gly Gln Pro Leu Trp Ile Leu Gly Asp Val Phe Leu Arg Ser Tyr
         355   360   365

Tyr Ser Val Tyr Asp Leu Gly Asn Asn Arg Val Gly Phe Ala Thr Ala
    370   375   380

Ala
385

<210> 161
<211> 377

<212> PRT
<213> Macaca fuscata

<400> 161
Gln Leu Leu Glu Ala Ala Val Val Lys Val Pro Leu Lys Lys Phe Lys
1   5   10   15

Ser Ile Arg Glu Thr Met Lys Glu Lys Gly Leu Leu Gly Glu Phe Leu
            20   25   30

Arg Thr His Lys Tyr Asp Pro Ala Trp Lys Tyr His Phe Gly Asp Leu
        35   40   45

Ser Val Ser Tyr Glu Pro Met Ala Tyr Met Asp Ala Ala Tyr Phe Gly
    50   55   60

Glu Ile Ser Ile Gly Thr Pro Pro Gln Asn Phe Leu Val Leu Phe Asp
65   70   75   80

Thr Gly Ser Ser Asn Leu Trp Val Pro Ser Val Tyr Cys Gln Ser Gln
            85   90   95

Ala Cys Thr Ser His Ser Arg Phe Asn Pro Ser Glu Ser Ser Thr Tyr
            100   105   110

Ser Thr Asn Gly Gln Thr Phe Ser Leu Gln Tyr Gly Ser Gly Ser Leu
        115   120   125

Thr Gly Phe Phe Gly Tyr Asp Thr Leu Thr Val Gln Ser Ile Gln Val
    130   135   140

Pro Asn Gln Glu Phe Gly Leu Ser Glu Asn Glu Pro Gly Thr Asn Phe
145   150   155   160

Val Tyr Ala Gln Phe Asp Gly Ile Met Gly Leu Ala Tyr Pro Thr Leu
            165   170   175

Ser Val Asp Gly Ala Thr Thr Ala Met Gln Gly Met Val Gln Glu Gly
            180   185   190

Ala Leu Thr Ser Pro Ile Phe Ser Val Tyr Leu Ser Asp Gln Gln Gly
        195   200   205

Ser Ser Gly Gly Ala Val Val Phe Gly Gly Val Asp Ser Ser Leu Tyr
    210   215   220

Thr Gly Gln Ile Tyr Trp Ala Pro Val Thr Gln Glu Leu Tyr Trp Gln
225   230   235   240

251

Ile Gly Ile Glu Glu Phe Leu Ile Gly Gly Gln Ala Ser Gly Trp Cys
245   250   255

Ser Glu Gly Cys Gln Ala Ile Val Asp Thr Gly Thr Ser Leu Leu Thr
        260   265   270

Val Pro Gln Gln Tyr Met Ser Ala Leu Leu Gln Ala Thr Gly Ala Gln
        275   280   285

Glu Asp Glu Tyr Gly Gln Phe Leu Val Asn Cys Asn Ser Ile Gln Asn
    290   295   300

Leu Pro Thr Leu Thr Phe Ile Ile Asn Gly Val Glu Phe Pro Leu Pro
305   310   315   320

Pro Ser Ser Tyr Ile Leu Asn Asn Asn Gly Tyr Cys Thr Val Gly Val
            325   330   335

Glu Pro Thr Tyr Leu Ser Ala Gln Asn Ser Gln Pro Leu Trp Ile Leu
            340   345   350

Gly Asp Val Phe Leu Arg Ser Tyr Tyr Ser Val Tyr Asp Leu Ser Asn
        355   360   365

Asn Arg Val Gly Phe Ala Thr Ala Ala
    370   375

<210> 162
<211> 388
<212> PRT
<213> Callithrix jacchus

<400> 162
Met Lys Trp Met Val Val Ala Phe Ile Cys Leu Gln Leu Leu Glu Ala
1   5   10   15

Thr Val Val Lys Val Pro Leu Lys Lys Phe Lys Ser Ile Arg Glu Thr
            20   25   30

Met Lys Glu Lys Gly Leu Leu Trp Glu Phe Leu Lys Thr His Lys His
        35   40   45

Asp Pro Ala Arg Lys Tyr Arg Val Ser Asp Leu Ser Val Ser Tyr Glu
    50   55   60

Pro Met Asp Tyr Met Asp Ala Ala Tyr Phe Gly Glu Ile Ser Ile Gly

252

Thr Pro Pro Gln Asn Phe Leu Val Leu Phe Asp Thr Gly Ser Ser Asn
                        85   90   95

Leu Trp Val Pro Ser Val Tyr Cys Gln Ser Gln Ala Cys Thr Ser His
            100   105   110

Ser Arg Phe Asn Pro Ser Ala Ser Ser Thr Tyr Ser Ser Asn Gly Gln
        115   120   125

Thr Phe Ser Leu Gln Tyr Gly Ser Gly Ser Leu Thr Gly Phe Phe Gly
    130   135   140

Tyr Asp Thr Leu Thr Val Gln Ser Ile Gln Val Pro Asn Gln Glu Phe
145   150   155   160

Gly Leu Ser Glu Asn Glu Pro Gly Thr Asn Phe Val Tyr Ala Gln Phe
                165   170   175

Asp Gly Ile Met Gly Leu Ala Tyr Pro Ala Leu Ser Met Gly Gly Ala
            180   185   190

Thr Thr Ala Met Gln Gly Met Leu Gln Glu Gly Ala Leu Thr Ser Pro
    195   200   205

Val Phe Ser Phe Tyr Leu Ser Asn Gln Gln Gly Ser Ser Gly Gly Ala
    210   215   220

Val Ile Phe Gly Gly Val Asp Ser Ser Leu Tyr Thr Gly Gln Ile Tyr
225   230   235   240

Trp Ala Pro Val Thr Gln Glu Leu Tyr Trp Gln Ile Gly Ile Glu Glu
            245   250   255

Phe Leu Ile Gly Gly Gln Ala Ser Gly Trp Cys Ser Glu Gly Cys Gln
            260   265   270

Ala Ile Val Asp Thr Gly Thr Ser Leu Leu Thr Val Pro Gln Gln Tyr
        275   280   285

Met Ser Ala Phe Leu Glu Ala Thr Gly Ala Gln Glu Asp Glu Tyr Gly
    290   295   300

Gln Phe Leu Val Asn Cys Asp Ser Ile Gln Asn Leu Pro Thr Leu Thr
305   310   315   320

Phe Ile Ile Asn Gly Val Glu Phe Pro Leu Pro Pro Ser Ser Tyr Ile

253

Leu Ser Asn Asn Gly Tyr Cys Thr Val Gly Val Glu Pro Thr Tyr Leu
            340   345   350

Ser Ser Gln Asn Ser Gln Pro Leu Trp Ile Leu Gly Asp Val Phe Leu
        355   360   365

Arg Ser Tyr Tyr Ser Val Phe Asp Leu Gly Asn Asn Arg Val Gly Phe
    370   375   380

Ala Thr Ala Ala
385

<210> 163
<211> 389
<212> PRT
<213> Rhinolophus ferrumequinum

<400> 163
Met Lys Trp Met Val Val Val Leu Leu Cys Leu Gln Leu Leu Glu Ala
    1   5   10   15

Lys Val Val Lys Val Pro Leu Lys Lys Leu Lys Ser Leu Arg Glu Thr
                20   25   30

Met Lys Glu Lys Gly Leu Leu Glu Glu Phe Leu Lys Asn His Lys Tyr
            35   40   45

Asp Pro Ala Gln Lys Tyr Arg Tyr Thr Asp Phe Ser Val Ala Tyr Glu
        50   55   60

Pro Met Ala Tyr Met Asp Ala Ala Tyr Phe Gly Glu Ile Ser Ile Gly
    65   70   75   80

Thr Pro Pro Gln Asn Phe Leu Val Leu Phe Asp Thr Gly Ser Ser Asn
                85   90   95

Leu Trp Val Pro Ser Val Tyr Cys Gln Thr Gln Ala Cys Thr Gly His
            100   105   110

Thr Arg Phe Asn Pro Ser Gln Ser Ser Thr Tyr Ser Thr Asn Gly Gln
        115   120   125

Thr Phe Ser Leu Gln Tyr Gly Ser Gly Ser Leu Thr Gly Phe Phe Gly
    130   135   140

Tyr Asp Thr Leu Thr Val Gln Ser Ile Gln Val Pro Asn Gln Glu Phe
145   150   155   160

Gly Leu Ser Glu Asn Glu Pro Gly Thr Asn Phe Val Tyr Ala Gln Phe
                165   170   175

Asp Gly Ile Met Gly Met Ala Tyr Pro Ser Leu Ala Met Gly Gly Ala
                180   185   190

Thr Thr Ala Leu Gln Gly Met Leu Gln Glu Gly Ala Leu Thr Ser Pro
                195   200   205

Val Phe Ser Phe Tyr Leu Ser Asn Gln Gln Gly Ser Gln Asn Gly Gly
        210   215   220

Ala Val Ile Phe Gly Gly Val Asp Asn Ser Leu Tyr Gln Gly Gln Ile
225   230   235   240

Tyr Trp Ala Pro Val Thr Gln Glu Leu Tyr Trp Gln Ile Gly Ile Glu
                245   250   255

Glu Phe Leu Ile Gly Gly Gln Ala Ser Gly Trp Cys Ser Gln Gly Cys
                260   265   270

Gln Ala Ile Val Asp Thr Gly Thr Ser Leu Leu Thr Val Pro Gln Gln
        275   280   285

Tyr Met Ser Ala Leu Leu Gln Ala Thr Gly Ala Gln Glu Asp Gln Tyr
        290   295   300

Gly Gln Phe Phe Val Asn Cys Asn Tyr Ile Gln Asn Leu Pro Thr Phe
305   310   315   320

Thr Phe Ile Ile Asn Gly Val Gln Phe Pro Leu Pro Pro Ser Ser Tyr
                325   330   335

Ile Leu Asn Asn Asn Gly Tyr Cys Thr Val Gly Val Glu Pro Thr Tyr
                340   345   350

Leu Pro Ser Gln Asn Gly Gln Pro Leu Trp Ile Leu Gly Asp Val Phe
        355   360   365

Leu Arg Ser Tyr Tyr Ser Val Tyr Asp Met Gly Asn Asn Arg Val Gly
        370   375   380

Phe Ala Thr Ala Ala
385

<210> 164
<211> 376
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Eukaryotic
      aspartyl protease domain sequence

<400> 164
Phe Val Arg Ile Pro Leu Lys Lys Val Pro Ser Leu Arg Glu Lys Leu
 1   5   10   15

Ser Glu Lys Gly Val Leu Leu Asp Phe Leu Val Lys Arg Lys Tyr Glu
            20   25   30

Pro Thr Lys Lys Leu Thr Gly Gly Ala Ser Ser Ser Arg Ser Ala Val
        35   40   45

Glu Pro Leu Leu Asn Tyr Leu Asp Ala Glu Tyr Tyr Gly Thr Ile Ser
    50   55   60

Ile Gly Thr Pro Pro Gln Lys Phe Thr Val Val Phe Asp Thr Gly Ser
 65   70   75   80

Ser Asp Leu Trp Val Pro Ser Val Tyr Cys Thr Ser Ser Tyr Ala Cys
                85   90   95

Lys Gly His Gly Thr Phe Asp Pro Ser Lys Ser Ser Thr Tyr Lys Asn
            100   105   110

Leu Gly Thr Thr Phe Ser Ile Ser Tyr Gly Asp Gly Ser Ser Ala Ser
        115   120   125

Gly Phe Leu Gly Gln Asp Thr Val Thr Val Gly Gly Ile Thr Val Thr
    130   135   140

Asn Gln Gln Phe Gly Leu Ala Thr Lys Glu Pro Gly Ser Phe Phe Ala
145   150   155   160

Thr Ala Val Phe Asp Gly Ile Leu Gly Leu Gly Phe Pro Ser Ile Glu
                165   170   175

Ala Gly Gly Pro Tyr Thr Pro Val Phe Asp Asn Leu Lys Ser Gln Gly
            180   185   190

Leu Ile Asp Ser Pro Ala Phe Ser Val Tyr Leu Asn Ser Asp Ser Gly

                               256

```
          195                    200                      205
Ala Gly Gly Glu Ile Ile Phe Gly Gly Val Asp Pro Ser Lys Tyr Thr
    210                    215                    220

Gly Ser Leu Thr Trp Val Pro Val Thr Ser Gln Gly Tyr Trp Gln Ile
225                    230                    235                    240

Thr Leu Asp Ser Ile Thr Val Gly Gly Ser Thr Thr Phe Cys Ser Ser
                   245                    250                    255

Gly Cys Gln Ala Ile Leu Asp Thr Gly Thr Ser Leu Leu Tyr Gly Pro
                   260                    265                    270

Thr Ser Ile Val Ser Lys Ile Ala Lys Ala Val Gly Ala Ser Leu Ser
         275                    280                    285

Glu Tyr Ser Gly Glu Tyr Val Ile Asp Cys Asp Ser Ile Ser Ser Leu
    290                    295                    300

Pro Asp Ile Thr Phe Phe Ile Gly Gly Ala Lys Ile Thr Val Pro Pro
305                    310                    315                    320

Ser Ala Tyr Val Leu Gln Pro Ser Ser Gly Gly Ser Asp Ile Cys Leu
                   325                    330                    335

Ser Gly Phe Gln Ser Asp Asp Ile Pro Gly Gly Pro Leu Trp Ile Leu
                   340                    345                    350

Gly Asp Val Phe Leu Arg Ser Ala Tyr Val Val Phe Asp Arg Asp Asn
         355                    360                    365

Asn Arg Ile Gly Leu Ala Pro Ala
    370                    375


<210> 165
<211> 5262
<212> PRT
<213> Homo sapiens

<400> 165
Met Asp Ser Gln Asn Leu Ala Gly Glu Asp Lys Asp Ser Gln Pro Ala
    1                    5                    10                   15

Ala Asp Gly Pro Ala Ala Ser Glu Asp Pro Ser Ala Thr Glu Ser Asp
                   20                    25                    30
```

Leu Pro Asn Pro His Val Gly Glu Val Ser Val Leu Ser Ser Gly Ser
          35   40   45

Pro Arg Leu Gln Glu Thr Pro Gln Asp Cys Ser Gly Gly Pro Val Arg
    50   55   60

Arg Cys Ala Leu Cys Asn Cys Gly Glu Pro Ala Leu His Gly Gln Arg
65   70   75   80

Glu Leu Arg Arg Phe Glu Leu Pro Phe Asp Trp Pro Arg Cys Pro Val
              85   90   95

Val Ser Pro Gly Gly Ser Pro Gly Pro Asn Glu Ala Val Leu Pro Ser
              100   105   110

Glu Asp Leu Ser Gln Ile Gly Phe Pro Glu Gly Leu Thr Pro Ala His
        115   120   125

Leu Gly Glu Pro Gly Gly Ser Cys Trp Ala His His Trp Cys Ala Ala
    130   135   140

Trp Ser Ala Gly Val Trp Gly Gln Glu Gly Pro Gln Leu Cys Gly Val
145   150   155   160

Asp Lys Ala Ile Phe Ser Gly Ile Ser Gln Arg Cys Ser His Cys Thr
              165   170   175

Arg Leu Gly Ala Ser Ile Pro Cys Arg Ser Pro Gly Cys Pro Arg Leu
              180   185   190

Tyr His Phe Pro Cys Ala Thr Ala Ser Gly Ser Phe Leu Ser Met Lys
        195   200   205

Thr Leu Gln Leu Leu Cys Pro Glu His Ser Glu Gly Ala Ala Tyr Leu
    210   215   220

Glu Glu Ala Arg Cys Ala Val Cys Glu Gly Pro Gly Glu Leu Cys Asp
225   230   235   240

Leu Phe Phe Cys Thr Ser Cys Gly His His Tyr His Gly Ala Cys Leu
              245   250   255

Asp Thr Ala Leu Thr Ala Arg Lys Arg Ala Gly Trp Gln Cys Pro Glu
              260   265   270

Cys Lys Val Cys Gln Ala Cys Arg Lys Pro Gly Asn Asp Ser Lys Met
        275   280   285

Leu Val Cys Glu Thr Cys Asp Lys Gly Tyr His Thr Phe Cys Leu Lys
    290   295   300

Pro Pro Met Glu Glu Leu Pro Ala His Ser Trp Lys Cys Lys Ala Cys
305   310   315   320

Arg Val Cys Arg Ala Cys Gly Ala Gly Ser Ala Glu Leu Asn Pro Asn
                325   330   335

Ser Glu Trp Phe Glu Asn Tyr Ser Leu Cys His Arg Cys His Lys Ala
                340   345   350

Gln Gly Gly Gln Thr Ile Arg Ser Val Ala Glu Gln His Thr Pro Val
            355   360   365

Cys Ser Arg Phe Ser Pro Pro Glu Pro Gly Asp Thr Pro Thr Asp Glu
    370   375   380

Pro Asp Ala Leu Tyr Val Ala Cys Gln Gly Gln Pro Lys Gly Gly His
385   390   395   400

Val Thr Ser Met Gln Pro Lys Glu Pro Gly Pro Leu Gln Cys Glu Ala
                405   410   415

Lys Pro Leu Gly Lys Ala Gly Val Gln Leu Glu Pro Gln Leu Glu Ala
            420   425   430

Pro Leu Asn Glu Glu Met Pro Leu Leu Pro Pro Pro Glu Glu Ser Pro
        435   440   445

Leu Ser Pro Pro Pro Glu Glu Ser Pro Thr Ser Pro Pro Pro Glu Ala
    450   455   460

Ser Arg Leu Ser Pro Pro Pro Glu Glu Leu Pro Ala Ser Pro Leu Pro
465   470   475   480

Glu Ala Leu His Leu Ser Arg Pro Leu Glu Glu Ser Pro Leu Ser Pro
            485   490   495

Pro Pro Glu Glu Ser Pro Leu Ser Pro Pro Glu Ser Ser Pro Phe
        500   505   510

Ser Pro Leu Glu Glu Ser Pro Leu Ser Pro Pro Glu Glu Ser Pro Pro
    515   520   525

Ser Pro Ala Leu Glu Thr Pro Leu Ser Pro Pro Pro Glu Ala Ser Pro
    530   535   540

Leu Ser Pro Pro Phe Glu Glu Ser Pro Leu Ser Pro Pro Pro Glu Glu
545   550   555   560

Leu Pro Thr Ser Pro Pro Pro Glu Ala Ser Arg Leu Ser Pro Pro Pro
                565   570   575

Glu Glu Ser Pro Met Ser Pro Pro Pro Glu Glu Ser Pro Met Ser Pro
                580   585   590

Pro Pro Glu Ala Ser Arg Leu Phe Pro Pro Phe Glu Glu Ser Pro Leu
            595   600   605

Ser Pro Pro Pro Glu Glu Ser Pro Leu Ser Pro Pro Pro Glu Ala Ser
        610   615   620

Arg Leu Ser Pro Pro Pro Glu Asp Ser Pro Met Ser Pro Pro Pro Glu
625   630   635   640

Glu Ser Pro Met Ser Pro Pro Pro Glu Val Ser Arg Leu Ser Pro Leu
                645   650   655

Pro Val Val Ser Arg Leu Ser Pro Pro Pro Glu Glu Ser Pro Leu Ser
            660   665   670

Pro Pro Ala Leu Ser Pro Leu Gly Glu Leu Glu Tyr Pro Phe Gly Ala
        675   680   685

Lys Gly Asp Ser Asp Pro Glu Ser Pro Leu Ala Ala Pro Ile Leu Glu
        690   695   700

Thr Pro Ile Ser Pro Pro Pro Glu Ala Asn Cys Thr Asp Pro Glu Pro
705   710   715   720

Val Pro Pro Met Ile Leu Pro Pro Ser Pro Gly Ser Pro Val Gly Pro
                725   730   735

Ala Ser Pro Ile Leu Met Glu Pro Leu Pro Pro Gln Cys Ser Pro Leu
            740   745   750

Leu Gln His Ser Leu Val Pro Gln Asn Ser Pro Pro Ser Gln Cys Ser
        755   760   765

Pro Pro Ala Leu Pro Leu Ser Val Pro Ser Pro Leu Ser Pro Ile Gly
        770   775   780

Lys Val Val Gly Val Ser Asp Glu Ala Glu Leu His Glu Met Glu Thr
785   790   795   800

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Glu Lys Val Ser Glu Pro Glu Cys Pro Ala Leu Glu Pro Ser Ala Thr
                805   810   815

Ser Pro Leu Pro Ser Pro Met Gly Asp Leu Ser Cys Pro Ala Pro Ser
                820   825   830

Pro Ala Pro Ala Leu Asp Asp Phe Ser Gly Leu Gly Glu Asp Thr Ala
            835   840   845

Pro Leu Asp Gly Ile Asp Ala Pro Gly Ser Gln Pro Glu Pro Gly Gln
        850   855   860

Thr Pro Gly Ser Leu Ala Ser Glu Leu Lys Gly Ser Pro Val Leu Leu
                    870   875   880
865

Asp Pro Glu Glu Leu Ala Pro Val Thr Pro Met Glu Val Tyr Pro Glu
                    885   890   895

Cys Lys Gln Thr Ala Gly Arg Gly Ser Pro Cys Glu Glu Gln Glu Glu
            900   905   910

Pro Arg Ala Pro Val Ala Pro Thr Pro Pro Thr Leu Ile Lys Ser Asp
        915   920   925

Ile Val Asn Glu Ile Ser Asn Leu Ser Gln Gly Asp Ala Ser Ala Ser
    930   935   940

Phe Pro Gly Ser Glu Pro Leu Leu Gly Ser Pro Asp Pro Glu Gly Gly
                    950   955   960
945

Gly Ser Leu Ser Met Glu Leu Gly Val Ser Thr Asp Val Ser Pro Ala
                965   970   975

Arg Asp Glu Gly Ser Leu Arg Leu Cys Thr Asp Ser Leu Pro Glu Thr
            980   985   990

Asp Asp Ser Leu Leu Cys Asp Ala Gly Thr Ala Ile Ser Gly Gly Lys
        995   1000   1005

Ala Glu Gly Glu Lys Gly Arg Arg Arg Ser Ser Pro Ala Arg Ser Arg
    1010   1015   1020

Ile Lys Gln Gly Arg Ser Ser Ser Phe Pro Gly Arg Arg Arg Pro Arg
                1030   1035   1040
1025

Gly Gly Ala His Gly Gly Arg Gly Arg Ala Arg Leu Lys Ser
            1045   1050   1055

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Thr Ala Ser Ser Ile Glu Thr Leu Val Val Ala Asp Ile Asp Ser Ser
          1060   1065   1070

Pro Ser Lys Glu Glu Glu Glu Glu Asp Asp Asp Thr Met Gln Asn Thr
        1075   1080   1085

Val Val Leu Phe Ser Asn Thr Asp Lys Phe Val Leu Met Gln Asp Met
      1090   1095   1100

Cys Val Val Cys Gly Ser Phe Gly Arg Gly Ala Glu Gly His Leu Leu
1105   1110   1115   1120

Ala Cys Ser Gln Cys Ser Gln Cys Tyr His Pro Tyr Cys Val Asn Ser
                1125   1130   1135

Lys Ile Thr Lys Val Met Leu Leu Lys Gly Trp Arg Cys Val Glu Cys
          1140   1145   1150

Ile Val Cys Glu Val Cys Gly Gln Ala Ser Asp Pro Ser Arg Leu Leu
        1155   1160   1165

Leu Cys Asp Asp Cys Asp Ile Ser Tyr His Thr Tyr Cys Leu Asp Pro
      1170   1175   1180

Pro Leu Leu Thr Val Pro Lys Gly Gly Trp Lys Cys Lys Trp Cys Val
1185   1190   1195   1200

Ser Cys Met Gln Cys Gly Ala Ala Ser Pro Gly Phe His Cys Glu Trp
                1205   1210   1215

Gln Asn Ser Tyr Thr His Cys Gly Pro Cys Ala Ser Leu Val Thr Cys
          1220   1225   1230

Pro Ile Cys His Ala Pro Tyr Val Glu Glu Asp Leu Leu Ile Gln Cys
        1235   1240   1245

Arg His Cys Glu Arg Trp Met His Ala Gly Cys Glu Ser Leu Phe Thr
      1250   1255   1260

Glu Asp Asp Val Asp His Ala Pro Asp Glu Gly Phe Asp Cys Val Ser
1265   1270   1275   1280

Cys Gln Pro Tyr Val Val Lys Pro Val Ala Pro Val Ala Pro Pro Glu
                1285   1290   1295

Leu Val Pro Met Lys Val Lys Glu Pro Glu Pro Gln Tyr Phe Arg Phe
          1300   1305   1310

Glu Gly Val Trp Leu Thr Glu Thr Gly Met Ala Leu Leu Arg Asn Leu
          1315   1320   1325

Thr Met Ser Pro Leu His Lys Arg Arg Gln Arg Arg Gly Arg Leu Gly
     1330   1335   1340

Leu Pro Gly Glu Ala Gly Leu Glu Gly Ser Glu Pro Ser Asp Ala Leu
1345   1350   1355   1360

Gly Pro Asp Asp Lys Lys Asp Gly Asp Leu Asp Thr Asp Glu Leu Leu
               1365   1370   1375

Lys Gly Glu Gly Gly Val Glu His Met Glu Cys Glu Ile Lys Leu Glu
          1380   1385   1390

Gly Pro Val Ser Pro Asp Val Glu Pro Gly Lys Glu Glu Thr Glu Glu
          1395   1400   1405

Ser Lys Lys Arg Lys Arg Lys Pro Tyr Arg Pro Gly Ile Gly Gly Phe
     1410   1415   1420

Met Val Arg Gln Arg Lys Ser His Thr Arg Thr Lys Lys Gly Pro Ala
1425   1430   1435   1440

Ala Gln Ala Glu Val Leu Ser Gly Asp Gly Gln Pro Asp Glu Val Ile
               1445   1450   1455

Pro Ala Asp Leu Pro Ala Glu Gly Ala Val Glu Gln Ser Leu Ala Glu
          1460   1465   1470

Gly Asp Glu Lys Lys Lys Gln Gln Arg Arg Gly Arg Lys Arg Ser Lys
     1475   1480   1485

Leu Glu Gly Met Phe Pro Ala Tyr Leu Gln Glu Ala Phe Phe Gly Lys
     1490   1495   1500

Glu Leu Leu Asp Leu Ser Arg Lys Ala Leu Phe Ala Val Gly Val Gly
1505   1510   1515   1520

Arg Pro Ser Phe Gly Leu Gly Thr Pro Lys Ala Lys Gly Asp Gly Gly
          1525   1530   1535

Ser Glu Arg Lys Glu Leu Pro Thr Ser Gln Lys Gly Asp Asp Gly Pro
          1540   1545   1550

Asp Ile Ala Asp Glu Glu Ser Arg Gly Leu Glu Gly Lys Ala Asp Thr
          1555   1560   1565

Pro Gly Pro Glu Asp Gly Gly Val Lys Ala Ser Pro Val Pro Ser Asp
    1570   1575   1580

Pro Glu Lys Pro Gly Thr Pro Gly Glu Gly Met Leu Ser Ser Asp Leu
1585   1590   1595   1600

Asp Arg Ile Ser Thr Glu Glu Leu Pro Lys Met Glu Ser Lys Asp Leu
            1605   1610   1615

Gln Gln Leu Phe Lys Asp Val Leu Gly Ser Glu Arg Glu Gln His Leu
        1620   1625   1630

Gly Cys Gly Thr Pro Gly Leu Glu Gly Ser Arg Thr Pro Leu Gln Arg
    1635   1640   1645

Pro Phe Leu Gln Gly Gly Leu Pro Leu Gly Asn Leu Pro Ser Ser Ser
    1650   1655   1660

Pro Met Asp Ser Tyr Pro Gly Leu Cys Gln Ser Pro Phe Leu Asp Ser
1665   1670   1675   1680

Arg Glu Arg Gly Gly Phe Phe Ser Pro Glu Pro Gly Glu Pro Asp Ser
            1685   1690   1695

Pro Trp Thr Gly Ser Gly Gly Thr Thr Pro Ser Thr Pro Thr Thr Pro
        1700   1705   1710

Thr Thr Glu Gly Glu Gly Asp Gly Leu Ser Tyr Asn Gln Arg Ser Leu
        1715   1720   1725

Gln Arg Trp Glu Lys Asp Glu Glu Leu Gly Gln Leu Ser Thr Ile Ser
    1730   1735   1740

Pro Val Leu Tyr Ala Asn Ile Asn Phe Pro Asn Leu Lys Gln Asp Tyr
1745   1750   1755   1760

Pro Asp Trp Ser Ser Arg Cys Lys Gln Ile Met Lys Leu Trp Arg Lys
            1765   1770   1775

Val Pro Ala Ala Asp Lys Ala Pro Tyr Leu Gln Lys Ala Lys Asp Asn
            1780   1785   1790

Arg Ala Ala His Arg Ile Asn Lys Val Gln Lys Gln Ala Glu Ser Gln
        1795   1800   1805

Ile Asn Lys Gln Thr Lys Val Gly Asp Ile Ala Arg Lys Thr Asp Arg
    1810   1815   1820

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Pro Ala Leu His Leu Arg Ile Pro Pro Gln Pro Gly Ala Leu Gly Ser
1825   1830   1835   1840

Pro Pro Pro Ala Ala Ala Pro Thr Ile Phe Ile Gly Ser Pro Thr Thr
                1845   1850   1855

Pro Ala Gly Leu Ser Thr Ser Ala Asp Gly Phe Leu Lys Pro Pro Ala
            1860   1865   1870

Gly Ser Val Pro Gly Pro Asp Ser Pro Gly Glu Leu Phe Leu Lys Leu
        1875   1880   1885

Pro Pro Gln Val Pro Ala Gln Ala Pro Ser Gln Asp Pro Phe Gly Leu
    1890   1895   1900

Ala Pro Ala Tyr Pro Leu Glu Pro Arg Phe Pro Thr Ala Pro Pro Thr
1905   1910   1915   1920

Tyr Pro Pro Tyr Pro Ser Pro Thr Gly Ala Pro Ala Gln Pro Pro Met
                1925   1930   1935

Leu Gly Ala Ser Ser Arg Pro Gly Ala Gly Gln Pro Gly Glu Phe His
            1940   1945   1950

Thr Thr Pro Pro Gly Thr Pro Arg His Gln Pro Ser Thr Pro Asp Pro
        1955   1960   1965

Phe Leu Lys Pro Arg Cys Pro Ser Leu Asp Asn Leu Ala Val Pro Glu
    1970   1975   1980

Ser Pro Gly Val Gly Gly Gly Lys Ala Ser Glu Pro Leu Leu Ser Pro
1985   1990   1995   2000

Pro Pro Phe Gly Glu Ser Arg Lys Ala Leu Glu Val Lys Lys Glu Glu
                2005   2010   2015

Leu Gly Ala Ser Ser Pro Ser Tyr Gly Pro Pro Asn Leu Gly Phe Val
            2020   2025   2030

Asp Ser Pro Ser Ser Gly Thr His Leu Gly Gly Leu Glu Leu Lys Thr
        2035   2040   2045

Pro Asp Val Phe Lys Ala Pro Leu Thr Pro Arg Ala Ser Gln Val Glu
    2050   2055   2060

Pro Gln Ser Pro Gly Leu Gly Leu Arg Pro Gln Glu Pro Pro Pro Ala
2065   2070   2075   2080

Gln Ala Leu Ala Pro Ser Pro Pro Ser His Pro Asp Ile Phe Arg Pro
                2085   2090   2095

Gly Ser Tyr Thr Asp Pro Tyr Ala Gln Pro Pro Leu Thr Pro Arg Pro
            2100   2105   2110

Gln Pro Pro Pro Pro Glu Ser Cys Cys Ala Leu Pro Pro Arg Ser Leu
        2115   2120   2125

Pro Ser Asp Pro Phe Ser Arg Val Pro Val Ser Pro Gln Ser Gln Ser
    2130   2135   2140

Ser Ser Gln Ser Pro Leu Thr Pro Arg Pro Leu Ser Ala Glu Ala Phe
2145   2150   2155   2160

Cys Pro Ser Pro Val Thr Pro Arg Phe Gln Ser Pro Asp Pro Tyr Ser
                2165   2170   2175

Arg Pro Pro Ser Arg Pro Gln Ser Arg Asp Pro Phe Ala Pro Leu His
            2180   2185   2190

Lys Pro Pro Arg Pro Gln Pro Pro Glu Val Ala Phe Lys Ala Gly Ser
        2195   2200   2205

Leu Ala His Thr Ser Leu Gly Ala Gly Gly Phe Pro Ala Ala Leu Pro
    2210   2215   2220

Ala Gly Pro Ala Gly Glu Leu His Ala Lys Val Pro Ser Gly Gln Pro
2225   2230   2235   2240

Pro Asn Phe Val Arg Ser Pro Gly Thr Gly Ala Phe Val Gly Thr Pro
            2245   2250   2255

Ser Pro Met Arg Phe Thr Phe Pro Gln Ala Val Gly Glu Pro Ser Leu
        2260   2265   2270

Lys Pro Pro Val Pro Gln Pro Gly Leu Pro Pro His Gly Ile Asn
        2275   2280   2285

Ser His Phe Gly Pro Gly Pro Thr Leu Gly Lys Pro Gln Ser Thr Asn
    2290   2295   2300

Tyr Thr Val Ala Thr Gly Asn Phe His Pro Ser Gly Ser Pro Leu Gly
2305   2310   2315   2320

Pro Ser Ser Gly Ser Thr Gly Glu Ser Tyr Gly Leu Ser Pro Leu Arg
                2325   2330   2335

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Pro Pro Ser Val Leu Pro Pro Pro Ala Pro Asp Gly Ser Leu Pro Tyr
          2340                  2345                  2350

Leu Ser His Gly Ala Ser Gln Arg Ser Gly Ile Thr Ser Pro Val Glu
      2355                  2360                  2365

Lys Arg Glu Asp Pro Gly Thr Gly Met Gly Ser Ser Leu Ala Thr Ala
    2370                  2375                  2380

Glu Leu Pro Gly Thr Gln Asp Pro Gly Met Ser Gly Leu Ser Gln Thr
2385                  2390                  2395                  2400

Glu Leu Glu Lys Gln Arg Gln Arg Gln Arg Leu Arg Glu Leu Leu Ile
              2405                  2410                  2415

Arg Gln Gln Ile Gln Arg Asn Thr Leu Arg Gln Glu Lys Glu Thr Ala
          2420                  2425                  2430

Ala Ala Ala Ala Gly Ala Val Gly Pro Pro Gly Ser Trp Gly Ala Glu
      2435                  2440                  2445

Pro Ser Ser Pro Ala Phe Glu Gln Leu Ser Arg Gly Gln Thr Pro Phe
    2450                  2455                  2460

Ala Gly Thr Gln Asp Lys Ser Ser Leu Val Gly Leu Pro Pro Ser Lys
2465                  2470                  2475                  2480

Leu Ser Gly Pro Ile Leu Gly Pro Gly Ser Phe Pro Ser Asp Asp Arg
              2485                  2490                  2495

Leu Ser Arg Pro Pro Pro Ala Thr Pro Ser Ser Met Asp Val Asn
          2500                  2505                  2510

Ser Arg Gln Leu Val Gly Gly Ser Gln Ala Phe Tyr Gln Arg Ala Pro
      2515                  2520                  2525

Tyr Pro Gly Ser Leu Pro Leu Gln Gln Gln Gln Gln Leu Trp Gln
    2530                  2535                  2540

Gln Gln Gln Ala Thr Ala Ala Thr Ser Met Arg Phe Ala Met Ser Ala
2545                  2550                  2555                  2560

Arg Phe Pro Ser Thr Pro Gly Pro Glu Leu Gly Arg Gln Ala Leu Gly
              2565                  2570                  2575

Ser Pro Leu Ala Gly Ile Ser Thr Arg Leu Pro Gly Pro Gly Glu Pro
          2580                  2585                  2590
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Val Pro Gly Pro Ala Gly Pro Ala Gln Phe Ile Glu Leu Arg His Asn
        2595   2600   2605

Val Gln Lys Gly Leu Gly Pro Gly Gly Thr Pro Phe Pro Gly Gln Gly
    2610   2615   2620

Pro Pro Gln Arg Pro Arg Phe Tyr Pro Val Ser Glu Asp Pro His Arg
2625   2630   2635   2640

Leu Ala Pro Glu Gly Leu Arg Gly Leu Ala Val Ser Gly Leu Pro Pro
            2645   2650   2655

Gln Lys Pro Ser Ala Pro Pro Ala Pro Glu Leu Asn Asn Ser Leu His
        2660   2665   2670

Pro Thr Pro His Thr Lys Gly Pro Thr Leu Pro Thr Gly Leu Glu Leu
        2675   2680   2685

Val Asn Arg Pro Pro Ser Ser Thr Glu Leu Gly Arg Pro Asn Pro Leu
    2690   2695   2700

Ala Leu Glu Ala Gly Lys Leu Pro Cys Glu Asp Pro Glu Leu Asp Asp
2705   2710   2715   2720

Asp Phe Asp Ala His Lys Ala Leu Glu Asp Asp Glu Glu Leu Ala His
            2725   2730   2735

Leu Gly Leu Gly Val Asp Val Ala Lys Gly Asp Asp Glu Leu Gly Thr
            2740   2745   2750

Leu Glu Asn Leu Glu Thr Asn Asp Pro His Leu Asp Asp Leu Leu Asn
        2755   2760   2765

Gly Asp Glu Phe Asp Leu Leu Ala Tyr Thr Asp Pro Glu Leu Asp Thr
    2770   2775   2780

Gly Asp Lys Lys Asp Ile Phe Asn Glu His Leu Arg Leu Val Glu Ser
2785   2790   2795   2800

Ala Asn Glu Glu Ala Glu Arg Glu Ala Leu Leu Arg Gly Val Glu Pro
            2805   2810   2815

Gly Pro Leu Gly Pro Glu Glu Arg Pro Pro Pro Ala Ala Asp Ala Ser
            2820   2825   2830

Glu Pro Arg Leu Ala Ser Val Leu Pro Glu Val Lys Pro Lys Val Glu
        2835   2840   2845

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Glu Gly Gly Arg His Pro Ser Pro Cys Gln Phe Thr Ile Ala Thr Pro
   2850   2855   2860

Lys Val Glu Pro Ala Pro Ala Ala Asn Ser Leu Gly Leu Gly Leu Lys
2865   2870   2875   2880

Pro Gly Gln Ser Met Met Gly Ser Arg Asp Thr Arg Met Gly Thr Gly
             2885   2890   2895

Pro Phe Ser Ser Ser Gly His Thr Ala Glu Lys Ala Ser Phe Gly Ala
          2900   2905   2910

Thr Gly Gly Pro Pro Ala His Leu Leu Thr Pro Ser Pro Leu Ser Gly
       2915   2920   2925

Pro Gly Gly Ser Ser Leu Leu Glu Lys Phe Glu Leu Glu Ser Gly Ala
   2930   2935   2940

Leu Thr Leu Pro Gly Gly Pro Ala Ala Ser Gly Asp Glu Leu Asp Lys
2945   2950   2955   2960

Met Glu Ser Ser Leu Val Ala Ser Glu Leu Pro Leu Leu Ile Glu Asp
             2965   2970   2975

Leu Leu Glu His Glu Lys Lys Glu Leu Gln Lys Lys Gln Gln Leu Ser
          2980   2985   2990

Ala Gln Leu Gln Pro Ala Gln Gln Gln Gln Gln Gln Gln Gln Gln His
   2995   3000   3005

Ser Leu Leu Pro Ala Pro Gly Pro Ala Gln Ala Met Ser Leu Pro His
   3010   3015   3020

Glu Gly Ser Ser Pro Ser Leu Ala Gly Ser Gln Gln Gln Leu Ser Leu
3025   3030   3035   3040

Gly Leu Ala Val Ala Arg Gln Pro Gly Leu Pro Gln Pro Leu Met Pro
             3045   3050   3055

Thr Gln Pro Pro Ala His Ala Leu Gln Gln Arg Leu Ala Pro Ser Met
          3060   3065   3070

Ala Met Val Ser Asn Gln Gly His Met Leu Ser Gly Gln His Gly Gly
       3075   3080   3085

Gln Ala Gly Leu Val Pro Gln Gln Ser Ser Gln Pro Val Leu Ser Gln
   3090   3095   3100

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Lys Pro Met Gly Thr Met Pro Pro Ser Met Cys Met Lys Pro Gln Gln
3105   3110   3115   3120

Leu Ala Met Gln Gln Gln Leu Ala Asn Ser Phe Phe Pro Asp Thr Asp
            3125   3130   3135

Leu Asp Lys Phe Ala Ala Glu Asp Ile Ile Gly Pro Ile Ala Lys Ala
            3140   3145   3150

Lys Met Val Ala Leu Lys Gly Ile Lys Lys Val Met Ala Gln Gly Ser
        3155   3160   3165

Ile Gly Val Ala Pro Gly Met Asn Arg Gln Gln Val Ser Leu Leu Ala
    3170   3175   3180

Gln Arg Leu Ser Gly Gly Pro Ser Ser Asp Leu Gln Asn His Val Ala
3185   3190   3195   3200

Ala Gly Ser Gly Gln Glu Arg Ser Ala Gly Asp Pro Ser Gln Pro Arg
                3205   3210   3215

Pro Asn Pro Pro Thr Phe Ala Gln Gly Val Ile Asn Glu Ala Asp Gln
            3220   3225   3230

Arg Gln Tyr Glu Glu Trp Leu Phe His Thr Gln Gln Leu Leu Gln Met
        3235   3240   3245

Gln Leu Lys Val Leu Glu Glu Gln Ile Gly Val His Arg Lys Ser Arg
    3250   3255   3260

Lys Ala Leu Cys Ala Lys Gln Arg Thr Ala Lys Ser Ala Gly Arg Glu
3265   3270   3275   3280

Phe Pro Glu Ala Asp Ala Glu Lys Leu Lys Leu Val Thr Glu Gln Gln
            3285   3290   3295

Ser Lys Ile Gln Lys Gln Leu Asp Gln Val Arg Lys Gln Gln Lys Glu
            3300   3305   3310

His Thr Asn Leu Met Ala Glu Tyr Arg Asn Lys Gln Gln Gln Gln Gln
        3315   3320   3325

Gln Gln Gln Gln Gln Gln Gln Gln Gln His Ser Ala Val Leu Ala Leu
    3330   3335   3340

Ser Pro Ser Gln Ser Pro Arg Leu Leu Thr Lys Leu Pro Gly Gln Leu
3345   3350   3355   3360

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Leu Pro Gly His Gly Leu Gln Pro Pro Gln Gly Pro Pro Gly Gly Gln
                3365   3370   3375

Ala Gly Gly Leu Arg Leu Thr Pro Gly Gly Met Ala Leu Pro Gly Gln
                3380   3385   3390

Pro Gly Gly Pro Phe Leu Asn Thr Ala Leu Ala Gln Gln Gln Gln Gln
                3395   3400   3405

Gln His Ser Gly Gly Ala Gly Ser Leu Ala Gly Pro Ser Gly Gly Phe
              3410   3415   3420

Phe Pro Gly Asn Leu Ala Leu Arg Ser Leu Gly Pro Asp Ser Arg Leu
3425   3430   3435   3440

Leu Gln Glu Arg Gln Leu Gln Leu Gln Gln Gln Arg Met Gln Leu Ala
                3445   3450   3455

Gln Lys Leu Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln His Leu
              3460   3465   3470

Leu Gly Gln Val Ala Ile Gln Gln Gln Gln Gln Gly Pro Gly Val
              3475   3480   3485

Gln Thr Asn Gln Ala Leu Gly Pro Lys Pro Gln Gly Leu Met Pro Pro
      3490   3495   3500

Ser Ser His Gln Gly Leu Leu Val Gln Gln Leu Ser Pro Gln Pro Pro
3505   3510   3515   3520

Gln Gly Pro Gln Gly Met Leu Gly Pro Ala Gln Val Ala Val Leu Gln
                3525   3530   3535

Gln Gln His Pro Gly Ala Leu Gly Pro Gln Gly Pro His Arg Gln Val
              3540   3545   3550

Leu Met Thr Gln Ser Arg Val Leu Ser Ser Pro Gln Leu Ala Gln Gln
      3555   3560   3565

Gly Gln Gly Leu Met Gly His Arg Leu Val Thr Ala Gln Gln Gln Gln
      3570   3575   3580

Gln Gln Gln Gln His Gln Gln Gln Gly Ser Met Ala Gly Leu Ser His
3585   3590   3595   3600

Leu Gln Gln Ser Leu Met Ser His Ser Gly Gln Pro Lys Leu Ser Ala
              3605   3610   3615

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Gln Pro Met Gly Ser Leu Gln Gln Leu Gln Gln Gln Gln Leu Gln
         3620                3625                3630

Gln Gln Gln Gln Leu Gln Gln Gln Gln Gln Gln Gln Leu Gln Gln Gln
     3635                3640                3645

Gln Gln Leu Gln Gln Gln Gln Leu Gln Gln Gln Gln Gln Gln Gln Gln
   3650                3655                3660

Leu Gln Gln Gln Gln Gln Gln Gln Leu Gln Gln Gln Gln Gln Gln Leu
3665                3670                3675                3680

Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Phe Gln Gln Gln Gln Gln
             3685                3690                3695

Gln Gln Gln Met Gly Leu Leu Asn Gln Ser Arg Thr Leu Leu Ser Pro
         3700                3705                3710

Gln Gln Gln Gln Gln Gln Gln Val Ala Leu Gly Pro Gly Met Pro Ala
     3715                3720                3725

Lys Pro Leu Gln His Phe Ser Ser Pro Gly Ala Leu Gly Pro Thr Leu
   3730                3735                3740

Leu Leu Thr Gly Lys Glu Gln Asn Thr Val Asp Pro Ala Val Ser Ser
3745                3750                3755                3760

Glu Ala Thr Glu Gly Pro Ser Thr His Gln Gly Gly Pro Leu Ala Ile
             3765                3770                3775

Gly Thr Thr Pro Glu Ser Met Ala Thr Glu Pro Gly Glu Val Lys Pro
         3780                3785                3790

Ser Leu Ser Gly Asp Ser Gln Leu Leu Leu Val Gln Pro Gln Pro Gln
     3795                3800                3805

Pro Gln Pro Ser Ser Leu Gln Leu Gln Pro Pro Leu Arg Leu Pro Gly
   3810                3815                3820

Gln Gln Gln Gln Gln Val Ser Leu Leu His Thr Ala Gly Gly Gly Ser
3825                3830                3835                3840

His Gly Gln Leu Gly Ser Gly Ser Ser Ser Glu Ala Ser Ser Val Pro
             3845                3850                3855

His Leu Leu Ala Gln Pro Ser Val Ser Leu Gly Asp Gln Pro Gly Ser
         3860                3865                3870
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Met Thr Gln Asn Leu Leu Gly Pro Gln Gln Pro Met Leu Glu Arg Pro
        3875   3880   3885

Met Gln Asn Asn Thr Gly Pro Gln Pro Pro Lys Pro Gly Pro Val Leu
    3890   3895   3900

Gln Ser Gly Gln Gly Leu Pro Gly Val Gly Ile Met Pro Thr Val Gly
3905   3910   3915   3920

Gln Leu Arg Ala Gln Leu Gln Gly Val Leu Ala Lys Asn Pro Gln Leu
            3925   3930   3935

Arg His Leu Ser Pro Gln Gln Gln Gln Leu Gln Ala Leu Leu Met
        3940   3945   3950

Gln Arg Gln Leu Gln Gln Ser Gln Ala Val Arg Gln Thr Pro Pro Tyr
    3955   3960   3965

Gln Glu Pro Gly Thr Gln Thr Ser Pro Leu Gln Gly Leu Leu Gly Cys
    3970   3975   3980

Gln Pro Gln Leu Gly Gly Phe Pro Gly Pro Gln Thr Gly Pro Leu Gln
3985   3990   3995   4000

Glu Leu Gly Ala Gly Pro Arg Pro Gln Gly Pro Pro Arg Leu Pro Ala
            4005   4010   4015

Pro Pro Gly Ala Leu Ser Thr Gly Pro Val Leu Gly Pro Val His Pro
        4020   4025   4030

Thr Pro Pro Pro Ser Ser Pro Gln Glu Pro Lys Arg Pro Ser Gln Leu
        4035   4040   4045

Pro Ser Pro Ser Ser Gln Leu Pro Thr Glu Ala Gln Leu Pro Pro Thr
    4050   4055   4060

His Pro Gly Thr Pro Lys Pro Gln Gly Pro Thr Leu Glu Pro Pro Pro
4065   4070   4075   4080

Gly Arg Val Ser Pro Ala Ala Ala Gln Leu Ala Asp Thr Leu Phe Ser
            4085   4090   4095

Lys Gly Leu Gly Pro Trp Asp Pro Pro Asp Asn Leu Ala Glu Thr Gln
            4100   4105   4110

Lys Pro Glu Gln Ser Ser Leu Val Pro Gly His Leu Asp Gln Val Asn
        4115   4120   4125

Gly Gln Val Val Pro Glu Ala Ser Gln Leu Ser Ile Lys Gln Glu Pro
    4130   4135   4140

Arg Glu Glu Pro Cys Ala Leu Gly Ala Gln Ser Val Lys Arg Glu Ala
4145   4150   4155   4160

Asn Gly Glu Pro Ile Gly Ala Pro Gly Thr Ser Asn His Leu Leu Leu
        4165   4170   4175

Ala Gly Pro Arg Ser Glu Ala Gly His Leu Leu Leu Gln Lys Leu Leu
        4180   4185   4190

Arg Ala Lys Asn Val Gln Leu Ser Thr Gly Gln Gly Ser Glu Gly Leu
    4195   4200   4205

Arg Ala Glu Ile Asn Gly His Ile Asp Ser Lys Leu Ala Gly Leu Glu
    4210   4215   4220

Gln Lys Leu Gln Gly Thr Pro Ser Asn Lys Glu Asp Ala Ala Ala Arg
4225   4230   4235   4240

Lys Pro Leu Thr Pro Lys Pro Lys Arg Val Gln Lys Ala Ser Asp Arg
                4245   4250   4255

Leu Val Ser Ser Arg Lys Lys Leu Arg Lys Glu Asp Gly Val Arg Ala
            4260   4265   4270

Ser Glu Ala Leu Leu Lys Gln Leu Lys Gln Glu Leu Ser Leu Leu Pro
        4275   4280   4285

Leu Thr Glu Pro Ala Ile Thr Ala Asn Phe Ser Leu Phe Ala Pro Phe
    4290   4295   4300

Gly Ser Gly Cys Pro Val Asn Gly Gln Ser Gln Leu Arg Gly Ala Phe
4305   4310   4315   4320

Gly Ser Gly Ala Leu Pro Thr Gly Pro Asp Tyr Tyr Ser Gln Leu Leu
            4325   4330   4335

Thr Lys Asn Asn Leu Ser Asn Pro Pro Thr Pro Pro Ser Ser Leu Pro
        4340   4345   4350

Pro Thr Pro Pro Pro Ser Val Gln Gln Lys Met Val Asn Gly Val Thr
        4355   4360   4365

Pro Ser Glu Glu Leu Gly Glu His Pro Lys Asp Ala Ala Ser Ala Arg
    4370   4375   4380

Asp Ser Glu Arg Ala Leu Arg Asp Thr Ser Glu Val Lys Ser Leu Asp
4385   4390   4395   4400

Leu Leu Ala Ala Leu Pro Thr Pro Pro His Asn Gln Thr Glu Asp Val
                 4405   4410   4415

Arg Met Glu Ser Asp Glu Asp Ser Asp Ser Pro Asp Ser Ile Val Pro
             4420   4425   4430

Ala Ser Ser Pro Glu Ser Ile Leu Gly Glu Glu Ala Pro Arg Phe Pro
         4435   4440   4445

His Leu Gly Ser Gly Arg Trp Glu Gln Glu Asp Arg Ala Leu Ser Pro
     4450   4455   4460

Val Ile Pro Leu Ile Pro Arg Asp Ser Ile Pro Val Phe Pro Asp Thr
4465   4470   4475   4480

Lys Pro Tyr Gly Ala Leu Gly Leu Glu Val Pro Gly Lys Leu Pro Val
             4485   4490   4495

Thr Thr Trp Glu Lys Gly Lys Gly Ser Glu Val Ser Val Met Leu Thr
         4500   4505   4510

Val Ser Ala Ala Ala Asp Lys Asn Leu Asn Gly Val Met Val Ala Val
     4515   4520   4525

Ala Glu Leu Leu Ser Met Lys Ile Pro Asn Ser Tyr Glu Val Leu Phe
     4530   4535   4540

Pro Glu Ser Pro Ala Arg Gly Gly Thr Glu Pro Lys Lys Gly Glu Ala
4545   4550   4555   4560

Glu Gly Pro Gly Gly Lys Glu Lys Gly Leu Glu Gly Lys Ser Pro Asp
             4565   4570   4575

Thr Gly Pro Asp Trp Leu Lys Gln Phe Asp Ala Val Leu Ala Gly Tyr
         4580   4585   4590

Thr Leu Lys Arg Gln Leu Asp Ile Leu Ser Leu Leu Lys Gln Glu Ser
         4595   4600   4605

Pro Ala Pro Glu Pro Pro Thr Gln His Arg Tyr Thr Tyr Asn Val Ser
     4610   4615   4620

Asn Leu Asp Val Arg Gln Leu Ser Ala Pro Pro Pro Glu Glu Pro Ser
4625   4630   4635   4640

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Pro Pro Pro Ser Pro Leu Ala Pro Ser Pro Ala Ser Pro Pro Thr Glu
            4645   4650   4655

Pro Leu Val Glu Leu Pro Thr Glu Pro Leu Ala Glu Pro Pro Val Pro
            4660   4665   4670

Ser Pro Leu Pro Leu Ala Ser Ser Pro Glu Ser Ala Arg Pro Lys Pro
        4675   4680   4685

Arg Ala Arg Pro Pro Glu Glu Gly Glu Asp Thr Arg Pro Pro Arg Leu
      4690   4695   4700

Lys Lys Trp Lys Gly Val Arg Trp Lys Arg Leu Arg Leu Leu Leu Thr
4705   4710   4715   4720

Ile Gln Lys Gly Ser Gly Arg Gln Glu Asp Glu Arg Glu Val Ala Glu
            4725   4730   4735

Phe Met Glu Gln Leu Gly Thr Ala Leu Arg Pro Asp Lys Val Pro Arg
        4740   4745   4750

Asp Met Arg Arg Cys Cys Phe Cys His Glu Glu Gly Asp Gly Ala Thr
        4755   4760   4765

Asp Gly Pro Ala Arg Leu Leu Asn Leu Asp Leu Asp Leu Trp Val His
    4770   4775   4780

Leu Asn Cys Ala Leu Trp Ser Thr Glu Val Tyr Glu Thr Gln Gly Gly
4785   4790   4795   4800

Ala Leu Met Asn Val Glu Val Ala Leu His Arg Gly Leu Leu Thr Lys
            4805   4810   4815

Cys Ser Leu Cys Gln Arg Thr Gly Ala Thr Ser Ser Cys Asn Arg Met
            4820   4825   4830

Arg Cys Pro Asn Val Tyr His Phe Gly Cys Ala Ile Arg Ala Lys Cys
        4835   4840   4845

Met Phe Phe Lys Asp Lys Thr Met Leu Cys Pro Met His Lys Ile Lys
    4850   4855   4860

Gly Pro Cys Glu Gln Glu Leu Ser Ser Phe Ala Val Phe Arg Arg Val
4865   4870   4875   4880

Tyr Ile Glu Arg Asp Glu Val Lys Gln Ile Ala Ser Ile Ile Gln Arg
            4885   4890   4895

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Gly Glu Arg Leu His Met Phe Arg Val Gly Gly Leu Val Phe His Ala
         4900                4905                  4910

Ile Gly Gln Leu Leu Pro His Gln Met Ala Asp Phe His Ser Ala Thr
       4915                4920                4925

Ala Leu Tyr Pro Val Gly Tyr Glu Ala Thr Arg Ile Tyr Trp Ser Leu
   4930                4935                4940

Arg Thr Asn Asn Arg Arg Cys Cys Tyr Arg Cys Ser Ile Gly Glu Asn
4945                4950                4955                4960

Asn Gly Arg Pro Glu Phe Val Ile Lys Val Ile Glu Gln Gly Leu Glu
            4965                4970                4975

Asp Leu Val Phe Thr Asp Ala Ser Pro Gln Ala Val Trp Asn Arg Ile
         4980                4985                4990

Ile Glu Pro Val Ala Ala Met Arg Lys Glu Ala Asp Met Leu Arg Leu
         4995                5000                5005

Phe Pro Glu Tyr Leu Lys Gly Glu Glu Leu Phe Gly Leu Thr Val His
   5010                5015                5020

Ala Val Leu Arg Ile Ala Glu Ser Leu Pro Gly Val Glu Ser Cys Gln
5025                5030                5035                5040

Asn Tyr Leu Phe Arg Tyr Gly Arg His Pro Leu Met Glu Leu Pro Leu
            5045                5050                5055

Met Ile Asn Pro Thr Gly Cys Ala Arg Ser Glu Pro Lys Ile Leu Thr
         5060                5065                5070

His Tyr Lys Arg Pro His Thr Leu Asn Ser Thr Ser Met Ser Lys Ala
         5075                5080                5085

Tyr Gln Ser Thr Phe Thr Gly Glu Thr Asn Thr Pro Tyr Ser Lys Gln
   5090                5095                5100

Phe Val His Ser Lys Ser Ser Gln Tyr Arg Arg Leu Arg Thr Glu Trp
5105                5110                5115                5120

Lys Asn Asn Val Tyr Leu Ala Arg Ser Arg Ile Gln Gly Leu Gly Leu
            5125                5130                5135

Tyr Ala Ala Lys Asp Leu Glu Lys His Thr Met Val Ile Glu Tyr Ile
         5140                5145                5150
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Gly Thr Ile Ile Arg Asn Glu Val Ala Asn Arg Arg Glu Lys Ile Tyr
        5155   5160   5165

Glu Glu Gln Asn Arg Gly Ile Tyr Met Phe Arg Ile Asn Asn Glu His
    5170   5175   5180

Val Ile Asp Ala Thr Leu Thr Gly Gly Pro Ala Arg Tyr Ile Asn His
5185   5190   5195   5200

Ser Cys Ala Pro Asn Cys Val Ala Glu Val Val Thr Phe Asp Lys Glu
                5205   5210   5215

Asp Lys Ile Ile Ile Ile Ser Ser Arg Arg Ile Pro Lys Gly Glu Glu
            5220   5225   5230

Leu Thr Tyr Asp Tyr Gln Phe Asp Phe Glu Asp Asp Gln His Glu Ile
        5235   5240   5245

Pro Cys His Cys Gly Ala Trp Asn Cys Arg Lys Trp Met Asn
    5250   5255   5260

<210> 166
<211> 5008
<212> PRT
<213> Homo sapiens

<400> 166
Met Ser Pro Pro Pro Glu Glu Ser Pro Met Ser Pro Pro Pro Glu Ala
 1   5   10   15

Ser Arg Leu Phe Pro Pro Phe Glu Glu Ser Pro Leu Ser Pro Pro Pro
            20   25   30

Glu Glu Ser Pro Leu Ser Pro Pro Pro Glu Ala Ser Arg Leu Ser Pro
        35   40   45

Pro Pro Glu Asp Ser Pro Met Ser Pro Pro Pro Glu Glu Ser Pro Met
        50   55   60

Ser Pro Pro Pro Glu Val Ser Arg Leu Ser Pro Leu Pro Val Val Ser
    65   70   75   80

Arg Leu Ser Pro Pro Pro Glu Glu Ser Pro Leu Ser Pro Pro Pro Glu
                85   90   95

Glu Ser Pro Thr Ser Pro Pro Pro Glu Ala Ser Arg Leu Ser Pro Pro
            100   105   110

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Pro Glu Asp Ser Pro Thr Ser Pro Pro Pro Glu Asp Ser Pro Ala Ser
        115                 120                 125

Pro Pro Pro Glu Asp Ser Leu Met Ser Leu Pro Leu Glu Glu Ser Pro
        130                 135                 140

Leu Leu Pro Leu Pro Glu Glu Pro Gln Leu Cys Pro Arg Ser Glu Gly
145                 150                 155                 160

Pro His Leu Ser Pro Arg Pro Glu Glu Pro His Leu Ser Pro Arg Pro
                165                 170                 175

Glu Glu Pro His Leu Ser Pro Gln Ala Glu Glu Pro His Leu Ser Pro
        180                 185                 190

Gln Pro Glu Glu Pro Cys Leu Cys Ala Val Pro Glu Glu Pro His Leu
        195                 200                 205

Ser Pro Gln Ala Glu Gly Pro His Leu Ser Pro Gln Pro Glu Glu Leu
        210                 215                 220

His Leu Ser Pro Gln Thr Glu Glu Pro His Leu Ser Pro Val Pro Glu
225                 230                 235                 240

Glu Pro Cys Leu Ser Pro Gln Pro Glu Glu Ser His Leu Ser Pro Gln
                245                 250                 255

Ser Glu Glu Pro Cys Leu Ser Pro Arg Pro Glu Glu Ser His Leu Ser
        260                 265                 270

Pro Glu Leu Glu Lys Pro Pro Leu Ser Pro Arg Pro Glu Lys Pro Pro
        275                 280                 285

Glu Glu Pro Gly Gln Cys Pro Ala Pro Glu Glu Leu Pro Leu Phe Pro
        290                 295                 300

Pro Pro Gly Glu Pro Ser Leu Ser Pro Leu Leu Gly Glu Pro Ala Leu
305                 310                 315                 320

Ser Glu Pro Gly Glu Pro Pro Leu Ser Pro Leu Pro Glu Glu Leu Pro
                325                 330                 335

Leu Ser Pro Ser Gly Glu Pro Ser Leu Ser Pro Gln Leu Met Pro Pro
        340                 345                 350

Asp Pro Leu Pro Pro Pro Leu Ser Pro Ile Ile Thr Ala Ala Ala Pro
        355                 360                 365
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Pro Ala Leu Ser Pro Leu Gly Glu Leu Glu Tyr Pro Phe Gly Ala Lys
    370   375   380

Gly Asp Ser Asp Pro Glu Ser Pro Leu Ala Ala Pro Ile Leu Glu Thr
385   390   395   400

Pro Ile Ser Pro Pro Pro Glu Ala Asn Cys Thr Asp Pro Glu Pro Val
                405   410   415

Pro Pro Met Ile Leu Pro Pro Ser Pro Gly Ser Pro Val Gly Pro Ala
            420   425   430

Ser Pro Ile Leu Met Glu Pro Leu Pro Pro Gln Cys Ser Pro Leu Leu
        435   440   445

Gln His Ser Leu Val Pro Gln Asn Ser Pro Pro Ser Gln Cys Ser Pro
    450   455   460

Pro Ala Leu Pro Leu Ser Val Pro Ser Pro Leu Ser Pro Ile Gly Lys
465   470   475   480

Val Val Gly Val Ser Asp Glu Ala Glu Leu His Glu Met Glu Thr Glu
            485   490   495

Lys Val Ser Glu Pro Glu Cys Pro Ala Leu Glu Pro Ser Ala Thr Ser
            500   505   510

Pro Leu Pro Ser Pro Met Gly Asp Leu Ser Cys Pro Ala Pro Ser Pro
        515   520   525

Ala Pro Ala Leu Asp Asp Phe Ser Gly Leu Gly Glu Asp Thr Ala Pro
        530   535   540

Leu Asp Gly Ile Asp Ala Pro Gly Ser Gln Pro Glu Pro Gly Gln Thr
545   550   555   560

Pro Gly Ser Leu Ala Ser Glu Leu Lys Gly Ser Pro Val Leu Leu Asp
            565   570   575

Pro Glu Glu Leu Ala Pro Val Thr Pro Met Glu Val Tyr Pro Glu Cys
            580   585   590

Lys Gln Thr Ala Gly Arg Gly Ser Pro Cys Glu Glu Gln Glu Glu Pro
        595   600   605

Arg Ala Pro Val Ala Pro Thr Pro Pro Thr Leu Ile Lys Ser Asp Ile
    610   615   620

Val Asn Glu Ile Ser Asn Leu Ser Gln Gly Asp Ala Ser Ala Ser Phe
625   630   635   640

Pro Gly Ser Glu Pro Leu Leu Gly Ser Pro Asp Pro Glu Gly Gly Gly
                645   650   655

Ser Leu Ser Met Glu Leu Gly Val Ser Thr Asp Val Ser Pro Ala Arg
            660   665   670

Asp Glu Gly Ser Leu Arg Leu Cys Thr Asp Ser Leu Pro Glu Thr Asp
        675   680   685

Asp Ser Leu Leu Cys Asp Ala Gly Thr Ala Ile Ser Gly Gly Lys Ala
    690   695   700

Glu Gly Glu Lys Gly Arg Arg Arg Ser Ser Pro Ala Arg Ser Arg Ile
705   710   715   720

Lys Gln Gly Arg Ser Ser Ser Phe Pro Gly Arg Arg Arg Pro Arg Gly
                725   730   735

Gly Ala His Gly Gly Arg Gly Arg Gly Arg Ala Arg Leu Lys Ser Thr
            740   745   750

Ala Ser Ser Ile Glu Thr Leu Val Val Ala Asp Ile Asp Ser Ser Pro
        755   760   765

Ser Lys Glu Glu Glu Glu Glu Asp Asp Asp Thr Met Gln Asn Thr Val
    770   775   780

Val Leu Phe Ser Asn Thr Asp Lys Phe Val Leu Met Gln Asp Met Cys
785   790   795   800

Val Val Cys Gly Ser Phe Gly Arg Gly Ala Glu Gly His Leu Leu Ala
                805   810   815

Cys Ser Gln Cys Ser Gln Cys Tyr His Pro Tyr Cys Val Asn Ser Lys
            820   825   830

Ile Thr Lys Val Met Leu Leu Lys Gly Trp Arg Cys Val Glu Cys Ile
        835   840   845

Val Cys Glu Val Cys Gly Gln Ala Ser Asp Pro Ser Arg Leu Leu Leu
    850   855   860

Cys Asp Asp Cys Asp Ile Ser Tyr His Thr Tyr Cys Leu Asp Pro Pro
865   870   875   880

Leu Leu Thr Val Pro Lys Gly Gly Trp Lys Cys Lys Trp Cys Val Ser
             885   890   895

Cys Met Gln Cys Gly Ala Ala Ser Pro Gly Phe His Cys Glu Trp Gln
             900   905   910

Asn Ser Tyr Thr His Cys Gly Pro Cys Ala Ser Leu Val Thr Cys Pro
         915   920   925

Ile Cys His Ala Pro Tyr Val Glu Glu Asp Leu Leu Ile Gln Cys Arg
     930   935   940

His Cys Glu Arg Trp Met His Ala Gly Cys Glu Ser Leu Phe Thr Glu
945   950   955   960

Asp Asp Val Asp His Ala Pro Asp Glu Gly Phe Asp Cys Val Ser Cys
                 965   970   975

Gln Pro Tyr Val Val Lys Pro Val Ala Pro Val Ala Pro Pro Glu Leu
             980   985   990

Val Pro Met Lys Val Lys Glu Pro Glu Pro Gln Tyr Phe Arg Phe Glu
         995   1000   1005

Gly Val Trp Leu Thr Glu Thr Gly Met Ala Leu Leu Arg Asn Leu Thr
     1010   1015   1020

Met Ser Pro Leu His Lys Arg Arg Gln Arg Arg Gly Arg Leu Gly Leu
1025   1030   1035   1040

Pro Gly Glu Ala Gly Leu Glu Gly Ser Glu Pro Ser Asp Ala Leu Gly
             1045   1050   1055

Pro Asp Asp Lys Lys Asp Gly Asp Leu Asp Thr Asp Glu Leu Leu Lys
             1060   1065   1070

Gly Glu Gly Gly Val Glu His Met Glu Cys Glu Ile Lys Leu Glu Gly
         1075   1080   1085

Pro Val Ser Pro Asp Val Glu Pro Gly Lys Glu Glu Thr Glu Glu Ser
     1090   1095   1100

Lys Lys Arg Lys Arg Lys Pro Tyr Arg Pro Gly Ile Gly Gly Phe Met
1105   1110   1115   1120

Val Arg Gln Arg Lys Ser His Thr Arg Thr Lys Lys Gly Pro Ala Ala
             1125   1130   1135

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Gln Ala Glu Val Leu Ser Gly Asp Gly Gln Pro Asp Glu Val Ile Pro
          1140   1145   1150

Ala Asp Leu Pro Ala Glu Gly Ala Val Glu Gln Ser Leu Ala Glu Gly
        1155   1160   1165

Asp Glu Lys Lys Lys Gln Gln Arg Arg Gly Arg Lys Arg Ser Gly Pro
    1170   1175   1180

Ala Ala Gln Ala Glu Val Leu Ser Gly Asp Gly Gln Pro Asp Glu Val
1185   1190   1195   1200

Ile Pro Ala Asp Leu Pro Ala Glu Gly Ala Val Glu Gln Ser Leu Ala
                1205   1210   1215

Glu Gly Asp Glu Lys Lys Lys Gln Gln Arg Arg Gly Arg Lys Lys Ser
            1220   1225   1230

Phe Phe Ala Gln Leu Ala Gly Glu Thr Thr Leu Asp Gly Gln Pro Ile
        1235   1240   1245

Glu Arg Thr Ile Asp Glu Asp Asn Ile Met Asp Pro Lys Pro Ala Glu
    1250   1255   1260

Gly Glu Glu Gln Ala Lys Lys Arg Arg Gly Arg Lys Lys Ser Lys Leu
1265   1270   1275   1280

Glu Gly Met Phe Pro Ala Tyr Leu Gln Glu Ala Phe Phe Gly Lys Glu
                1285   1290   1295

Leu Leu Asp Leu Ser Arg Lys Ala Leu Phe Ala Val Gly Val Gly Arg
            1300   1305   1310

Pro Ser Phe Gly Leu Gly Thr Pro Lys Ala Lys Gly Asp Gly Gly Ser
        1315   1320   1325

Glu Arg Lys Glu Leu Pro Thr Ser Gln Lys Gly Asp Asp Gly Pro Asp
    1330   1335   1340

Ile Ala Asp Glu Glu Ser Arg Gly Leu Glu Gly Lys Ala Asp Thr Pro
1345   1350   1355   1360

Gly Pro Glu Asp Gly Gly Val Lys Ala Ser Pro Val Pro Ser Asp Pro
                1365   1370   1375

Glu Lys Pro Gly Thr Pro Gly Glu Gly Met Leu Ser Ser Asp Leu Asp
        1380   1385   1390

Arg Ile Ser Thr Glu Glu Leu Pro Lys Met Glu Ser Lys Asp Leu Gln
1395   1400   1405

Gln Leu Phe Lys Asp Val Leu Gly Ser Glu Arg Glu Gln His Leu Gly
1410   1415   1420

Cys Gly Thr Pro Gly Leu Glu Gly Ser Arg Thr Pro Leu Gln Arg Pro
1425   1430   1435   1440

Phe Leu Gln Gly Gly Leu Pro Leu Gly Asn Leu Pro Ser Ser Ser Pro
                1445   1450   1455

Met Asp Ser Tyr Pro Gly Leu Cys Gln Ser Pro Phe Leu Asp Ser Arg
            1460   1465   1470

Glu Arg Gly Gly Phe Phe Ser Pro Glu Pro Gly Glu Pro Asp Ser Pro
        1475   1480   1485

Trp Thr Gly Ser Gly Gly Thr Thr Pro Ser Thr Pro Thr Thr Pro Thr
    1490   1495   1500

Thr Glu Gly Glu Gly Asp Gly Leu Ser Tyr Asn Gln Arg Ser Leu Gln
1505   1510   1515   1520

Arg Trp Glu Lys Asp Glu Glu Leu Gly Gln Leu Ser Thr Ile Ser Pro
                1525   1530   1535

Val Leu Tyr Ala Asn Ile Asn Phe Pro Asn Leu Lys Gln Asp Tyr Pro
            1540   1545   1550

Asp Trp Ser Ser Arg Cys Lys Gln Ile Met Lys Leu Trp Arg Lys Val
        1555   1560   1565

Pro Ala Ala Asp Lys Ala Pro Tyr Leu Gln Lys Ala Lys Asp Asn Arg
    1570   1575   1580

Ala Ala His Arg Ile Asn Lys Val Gln Lys Gln Ala Glu Ser Gln Ile
1585   1590   1595   1600

Asn Lys Gln Thr Lys Val Gly Asp Ile Ala Arg Lys Thr Asp Arg Pro
                1605   1610   1615

Ala Leu His Leu Arg Ile Pro Pro Gln Pro Gly Ala Leu Gly Ser Pro
            1620   1625   1630

Pro Pro Ala Ala Ala Pro Thr Ile Phe Ile Gly Ser Pro Thr Thr Pro
        1635   1640   1645

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Ala Gly Leu Ser Thr Ser Ala Asp Gly Phe Leu Lys Pro Pro Ala Gly
   1650   1655   1660

Ser Val Pro Gly Pro Asp Ser Pro Gly Glu Leu Phe Leu Lys Leu Pro
1665   1670   1675   1680

Pro Gln Val Pro Ala Gln Ala Pro Ser Gln Asp Pro Phe Gly Leu Ala
              1685   1690   1695

Pro Ala Tyr Pro Leu Glu Pro Arg Phe Pro Thr Ala Pro Pro Thr Tyr
         1700   1705   1710

Pro Pro Tyr Pro Ser Pro Thr Gly Ala Pro Ala Gln Pro Pro Met Leu
      1715   1720   1725

Gly Ala Ser Ser Arg Pro Gly Ala Gly Gln Pro Gly Glu Phe His Thr
   1730   1735   1740

Thr Pro Pro Gly Thr Pro Arg His Gln Pro Ser Thr Pro Asp Pro Phe
1745   1750   1755   1760

Leu Lys Pro Arg Cys Pro Ser Leu Asp Asn Leu Ala Val Pro Glu Ser
              1765   1770   1775

Pro Gly Val Gly Gly Gly Lys Ala Ser Glu Pro Leu Leu Ser Pro Pro
         1780   1785   1790

Pro Phe Gly Glu Ser Arg Lys Ala Leu Glu Val Lys Lys Glu Glu Leu
      1795   1800   1805

Gly Ala Ser Ser Pro Ser Tyr Gly Pro Pro Asn Leu Gly Phe Val Asp
   1810   1815   1820

Ser Pro Ser Ser Gly Thr His Leu Gly Gly Leu Glu Leu Lys Thr Pro
1825   1830   1835   1840

Asp Val Phe Lys Ala Pro Leu Thr Pro Arg Ala Ser Gln Val Glu Pro
              1845   1850   1855

Gln Ser Pro Gly Leu Gly Leu Arg Pro Gln Glu Pro Pro Pro Ala Gln
         1860   1865   1870

Ser Leu Pro Ser Asp Pro Phe Ser Arg Val Pro Val Ser Pro Gln Ser
      1875   1880   1885

Gln Ser Ser Ser Gln Ser Pro Leu Thr Pro Arg Pro Leu Ser Ala Glu
   1890   1895   1900

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Ala Phe Cys Pro Ser Pro Val Thr Pro Arg Phe Gln Ser Pro Asp Pro
1905   1910   1915   1920

Tyr Ser Arg Pro Pro Ser Arg Pro Gln Ser Arg Asp Pro Phe Ala Pro
          1925   1930   1935

Leu His Lys Pro Pro Arg Pro Gln Pro Pro Glu Val Ala Phe Lys Ala
          1940   1945   1950

Gly Ser Leu Ala His Thr Ser Leu Gly Ala Gly Gly Phe Pro Ala Ala
      1955   1960   1965

Leu Pro Ala Gly Pro Ala Gly Glu Leu His Ala Lys Val Pro Ser Gly
   1970   1975   1980

Gln Pro Pro Asn Phe Val Arg Ser Pro Gly Thr Gly Ala Phe Val Gly
1985   1990   1995   2000

Thr Pro Ser Pro Met Arg Phe Thr Phe Pro Gln Ala Val Gly Glu Pro
          2005   2010   2015

Ser Leu Lys Pro Pro Val Pro Gln Pro Gly Leu Pro Pro Pro His Gly
          2020   2025   2030

Ile Asn Ser His Phe Gly Pro Gly Pro Thr Leu Gly Lys Pro Gln Ser
      2035   2040   2045

Thr Asn Tyr Thr Val Ala Thr Gly Asn Phe His Pro Ser Gly Ser Pro
   2050   2055   2060

Leu Gly Pro Ser Ser Gly Ser Thr Gly Glu Ser Tyr Gly Leu Ser Pro
2065   2070   2075   2080

Leu Arg Pro Pro Ser Val Leu Pro Pro Pro Ala Pro Asp Gly Ser Leu
          2085   2090   2095

Pro Tyr Leu Ser His Gly Ala Ser Gln Arg Ser Gly Ile Thr Ser Pro
          2100   2105   2110

Val Glu Lys Arg Glu Asp Pro Gly Thr Gly Met Gly Ser Ser Leu Ala
      2115   2120   2125

Thr Ala Glu Leu Pro Gly Thr Gln Asp Pro Gly Met Ser Gly Leu Ser
   2130   2135   2140

Gln Thr Glu Leu Glu Lys Gln Arg Gln Arg Gln Arg Leu Arg Glu Leu
2145   2150   2155   2160

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Leu Ile Arg Gln Gln Ile Gln Arg Asn Thr Leu Arg Gln Glu Lys Glu
              2165                2170                2175

Thr Ala Ala Ala Ala Ala Gly Ala Val Gly Pro Pro Gly Ser Trp Gly
          2180                2185                2190

Ala Glu Pro Ser Ser Pro Ala Phe Glu Gln Leu Ser Arg Gly Gln Thr
      2195                2200                2205

Pro Phe Ala Gly Thr Gln Asp Lys Ser Ser Leu Val Gly Leu Pro Pro
    2210                2215                2220

Ser Lys Leu Ser Gly Pro Ile Leu Gly Pro Gly Ser Phe Pro Ser Asp
2225                2230                2235                2240

Asp Arg Leu Ser Arg Pro Pro Pro Pro Ala Thr Pro Ser Ser Met Asp
              2245                2250                2255

Val Asn Ser Arg Gln Leu Val Gly Gly Ser Gln Ala Phe Tyr Gln Arg
          2260                2265                2270

Ala Pro Tyr Pro Gly Ser Leu Pro Leu Gln Gln Gln Gln Gln Gln Leu
      2275                2280                2285

Trp Gln Gln Gln Gln Ala Thr Ala Ala Thr Ser Met Arg Phe Ala Met
    2290                2295                2300

Ser Ala Arg Phe Pro Ser Thr Pro Gly Pro Glu Leu Gly Arg Gln Ala
2305                2310                2315                2320

Leu Gly Ser Pro Leu Ala Gly Ile Ser Thr Arg Leu Pro Gly Pro Gly
          2325                2330                2335

Glu Pro Val Pro Gly Pro Ala Gly Pro Ala Gln Phe Ile Glu Leu Arg
          2340                2345                2350

His Asn Val Gln Lys Gly Leu Gly Pro Gly Gly Thr Pro Phe Pro Gly
      2355                2360                2365

Gln Gly Pro Pro Gln Arg Pro Arg Phe Tyr Pro Val Ser Glu Asp Pro
    2370                2375                2380

His Arg Leu Ala Pro Glu Gly Leu Arg Gly Leu Ala Val Ser Gly Leu
2385                2390                2395                2400

Pro Pro Gln Lys Pro Ser Ala Pro Pro Ala Pro Glu Leu Asn Asn Ser
              2405                2410                2415
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Leu His Pro Thr Pro His Thr Lys Gly Pro Thr Leu Pro Thr Gly Leu
          2420   2425   2430

Glu Leu Val Asn Arg Pro Pro Ser Ser Thr Glu Leu Gly Arg Pro Asn
        2435   2440   2445

Pro Leu Ala Leu Glu Ala Gly Lys Leu Pro Cys Glu Asp Pro Glu Leu
      2450   2455   2460

Asp Asp Asp Phe Asp Ala His Lys Ala Leu Glu Asp Asp Glu Glu Leu
2465   2470   2475   2480

Ala His Leu Gly Leu Gly Val Asp Val Ala Lys Gly Asp Asp Glu Leu
            2485   2490   2495

Gly Thr Leu Glu Asn Leu Glu Thr Asn Asp Pro His Leu Asp Asp Leu
          2500   2505   2510

Leu Asn Gly Asp Glu Phe Asp Leu Leu Ala Tyr Thr Asp Pro Glu Leu
        2515   2520   2525

Asp Thr Gly Asp Lys Lys Asp Ile Phe Asn Glu His Leu Arg Leu Val
      2530   2535   2540

Glu Ser Ala Asn Glu Glu Ala Glu Arg Glu Ala Leu Leu Arg Gly Val
2545   2550   2555   2560

Glu Pro Gly Pro Leu Gly Pro Glu Glu Arg Pro Pro Pro Ala Ala Asp
            2565   2570   2575

Ala Ser Glu Pro Arg Leu Ala Ser Val Leu Pro Glu Val Lys Pro Lys
            2580   2585   2590

Val Glu Glu Gly Gly Arg His Pro Ser Pro Cys Gln Phe Thr Ile Ala
        2595   2600   2605

Thr Pro Lys Val Glu Pro Ala Pro Ala Ala Asn Ser Leu Gly Leu Gly
      2610   2615   2620

Leu Lys Pro Gly Gln Ser Met Met Gly Ser Arg Asp Thr Arg Met Gly
2625   2630   2635   2640

Thr Gly Pro Phe Ser Ser Ser Gly His Thr Ala Glu Lys Ala Ser Phe
                2645   2650   2655

Gly Ala Thr Gly Gly Pro Pro Ala His Leu Leu Thr Pro Ser Pro Leu
            2660   2665   2670

Ser Gly Pro Gly Gly Ser Ser Leu Leu Glu Lys Phe Glu Leu Glu Ser
    2675   2680   2685

Gly Ala Leu Thr Leu Pro Gly Gly Pro Ala Ala Ser Gly Asp Glu Leu
  2690   2695   2700

Asp Lys Met Glu Ser Ser Leu Val Ala Ser Glu Leu Pro Leu Leu Ile
2705   2710   2715   2720

Glu Asp Leu Leu Glu His Glu Lys Lys Glu Leu Gln Lys Lys Gln Gln
            2725   2730   2735

Leu Ser Ala Gln Leu Gln Pro Ala Gln Gln Gln Gln Gln Gln Gln Gln
        2740   2745   2750

Gln His Ser Leu Leu Pro Ala Pro Gly Pro Ala Gln Gln Ala Met Ser Leu
    2755   2760   2765

Pro His Glu Gly Ser Ser Pro Ser Leu Ala Gly Ser Gln Gln Gln Leu
  2770   2775   2780

Ser Leu Gly Leu Ala Val Ala Arg Gln Pro Gly Leu Pro Gln Pro Leu
2785   2790   2795   2800

Met Pro Thr Gln Pro Pro Ala His Ala Leu Gln Gln Arg Leu Ala Pro
            2805   2810   2815

Ser Met Ala Met Val Ser Asn Gln Gly His Met Leu Ser Gly Gln His
        2820   2825   2830

Gly Gly Gln Ala Gly Leu Val Pro Gln Gln Ser Ser Gln Pro Val Leu
    2835   2840   2845

Ser Gln Lys Pro Met Gly Thr Met Pro Pro Ser Met Cys Met Lys Pro
  2850   2855   2860

Gln Gln Leu Ala Met Gln Gln Gln Leu Ala Asn Ser Phe Phe Pro Asp
2865   2870   2875   2880

Thr Asp Leu Asp Lys Phe Ala Ala Glu Asp Ile Ile Gly Pro Ile Ala
            2885   2890   2895

Lys Ala Lys Met Val Ala Leu Lys Gly Ile Lys Lys Val Met Ala Gln
        2900   2905   2910

Gly Ser Ile Gly Val Ala Pro Gly Met Asn Arg Gln Gln Val Ser Leu
    2915   2920   2925

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Leu Ala Gln Arg Leu Ser Gly Gly Pro Ser Ser Asp Leu Gln Asn His
   2930                2935                2940

Val Ala Ala Gly Ser Gly Gln Glu Arg Ser Ala Gly Asp Pro Ser Gln
2945                2950                2955                2960

Pro Arg Pro Asn Pro Pro Thr Phe Ala Gln Gly Val Ile Asn Glu Ala
                2965                2970                2975

Asp Gln Arg Gln Tyr Glu Glu Trp Leu Phe His Thr Gln Gln Leu Leu
                2980                2985                2990

Gln Met Gln Leu Lys Val Leu Glu Glu Gln Ile Gly Val His Arg Lys
        2995                3000                3005

Ser Arg Lys Ala Leu Cys Ala Lys Gln Arg Thr Ala Lys Lys Ala Gly
   3010                3015                3020

Arg Glu Phe Pro Glu Ala Asp Ala Glu Lys Leu Lys Leu Val Thr Glu
3025                3030                3035                3040

Gln Gln Ser Lys Ile Gln Lys Gln Leu Asp Gln Val Arg Lys Gln Gln
                3045                3050                3055

Lys Glu His Thr Asn Leu Met Ala Glu Tyr Arg Asn Lys Gln Gln Gln
                3060                3065                3070

Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln His Ser Ala Val Leu
        3075                3080                3085

Ala Leu Ser Pro Ser Gln Ser Pro Arg Leu Leu Thr Lys Leu Pro Gly
   3090                3095                3100

Gln Leu Leu Pro Gly His Gly Leu Gln Pro Pro Gln Gly Pro Pro Gly
3105                3110                3115                3120

Gly Gln Ala Gly Gly Leu Arg Leu Thr Pro Gly Gly Met Ala Leu Pro
                3125                3130                3135

Gly Gln Pro Gly Gly Pro Phe Leu Asn Thr Ala Leu Ala Gln Gln Gln
        3140                3145                3150

Gln Gln Gln His Ser Gly Gly Ala Gly Ser Leu Ala Gly Pro Ser Gly
        3155                3160                3165

Gly Phe Phe Pro Gly Asn Leu Ala Leu Arg Ser Leu Gly Pro Asp Ser
   3170                3175                3180
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Arg Leu Leu Gln Glu Arg Gln Leu Gln Leu Gln Gln Arg Met Gln
3185   3190   3195   3200

Leu Ala Gln Lys Leu Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln
             3205   3210   3215

His Leu Leu Gly Gln Val Ala Ile Gln Gln Gln Gln Gln Gln Gly Pro
          3220   3225   3230

Gly Val Gln Thr Asn Gln Ala Leu Gly Pro Lys Pro Gln Gly Leu Met
       3235   3240   3245

Pro Pro Ser Ser His Gln Gly Leu Leu Val Gln Gln Leu Ser Pro Gln
    3250   3255   3260

Pro Pro Gln Gly Pro Gln Gly Met Leu Gly Pro Ala Gln Val Ala Val
3265   3270   3275   3280

Leu Gln Gln Gln His Pro Gly Ala Leu Gly Pro Gln Gly Pro His Arg
             3285   3290   3295

Gln Val Leu Met Thr Gln Ser Arg Val Leu Ser Ser Pro Gln Leu Ala
          3300   3305   3310

Gln Gln Gly Gln Gly Leu Met Gly His Arg Leu Val Thr Ala Gln Gln
       3315   3320   3325

Gln Gln Gln Gln Gln Gln His Gln Gln Gln Gly Ser Met Ala Gly Leu
    3330   3335   3340

Ser His Leu Gln Gln Ser Leu Met Ser His Ser Gly Gln Pro Lys Leu
3345   3350   3355   3360

Ser Ala Gln Pro Met Gly Ser Leu Gln Gln Leu Gln Gln Gln Gln Gln
             3365   3370   3375

Leu Gln Gln Gln Gln Gln Leu Gln Gln Gln Gln Gln Gln Gln Leu Gln
          3380   3385   3390

Gln Gln Gln Gln Leu Gln Gln Gln Gln Leu Gln Gln Gln Gln Gln Gln
       3395   3400   3405

Gln Gln Leu Gln Gln Gln Gln Gln Gln Gln Leu Gln Gln Gln Gln Gln
    3410   3415   3420

Gln Leu Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Phe Gln Gln Gln
3425   3430   3435   3440

291

Gln Gln Gln Gln Gln Met Gly Leu Leu Asn Gln Ser Arg Thr Leu Leu
            3445   3450   3455

Ser Pro Gln Gln Gln Gln Gln Gln Val Ala Leu Gly Pro Gly Met
         3460   3465   3470

Pro Ala Lys Pro Leu Gln His Phe Ser Ser Pro Gly Ala Leu Gly Pro
       3475   3480   3485

Thr Leu Leu Leu Thr Gly Lys Glu Gln Asn Thr Val Asp Pro Ala Val
  3490   3495   3500

Ser Ser Glu Ala Thr Glu Gly Pro Ser Thr His Gln Gly Gly Pro Leu
3505   3510   3515   3520

Ala Ile Gly Thr Thr Pro Glu Ser Met Ala Thr Glu Pro Gly Glu Val
            3525   3530   3535

Lys Pro Ser Leu Ser Gly Asp Ser Gln Leu Leu Leu Val Gln Pro Gln
         3540   3545   3550

Pro Gln Pro Gln Pro Ser Ser Leu Gln Leu Gln Pro Pro Leu Arg Leu
      3555   3560   3565

Pro Gly Gln Gln Gln Gln Gln Val Ser Leu Leu His Thr Ala Gly Gly
   3570   3575   3580

Gly Ser His Gly Gln Leu Gly Ser Gly Ser Ser Ser Glu Ala Ser Ser
3585   3590   3595   3600

Val Pro His Leu Leu Ala Gln Pro Ser Val Ser Leu Gly Asp Gln Pro
            3605   3610   3615

Gly Ser Met Thr Gln Asn Leu Leu Gly Pro Gln Gln Pro Met Leu Glu
         3620   3625   3630

Arg Pro Met Gln Asn Asn Thr Gly Pro Gln Pro Pro Lys Pro Gly Pro
      3635   3640   3645

Val Leu Gln Ser Gly Gln Gly Leu Pro Gly Val Gly Ile Met Pro Thr
   3650   3655   3660

Val Gly Gln Leu Arg Ala Gln Leu Gln Gly Val Leu Ala Lys Asn Pro
3665   3670   3675   3680

Gln Leu Arg His Leu Ser Pro Gln Gln Gln Gln Leu Gln Ala Leu
   3685   3690   3695

292

Leu Met Gln Arg Gln Leu Gln Gln Ser Gln Ala Val Arg Gln Thr Pro
                3700   3705   3710

Pro Tyr Gln Glu Pro Gly Thr Gln Thr Ser Pro Leu Gln Gly Leu Leu
        3715   3720   3725

Gly Cys Gln Pro Gln Leu Gly Gly Phe Pro Gly Pro Gln Thr Gly Pro
    3730   3735   3740

Leu Gln Glu Leu Gly Ala Gly Pro Arg Pro Gln Gly Pro Pro Arg Leu
3745   3750   3755   3760

Pro Ala Pro Pro Gly Ala Leu Ser Thr Gly Pro Val Leu Gly Pro Val
            3765   3770   3775

His Pro Thr Pro Pro Pro Ser Ser Pro Gln Glu Pro Lys Arg Pro Ser
        3780   3785   3790

Gln Leu Pro Ser Pro Ser Ser Gln Leu Pro Thr Glu Ala Gln Leu Pro
        3795   3800   3805

Pro Thr His Pro Gly Thr Pro Lys Pro Gln Gly Pro Thr Leu Glu Pro
    3810   3815   3820

Pro Pro Gly Arg Val Ser Pro Ala Ala Ala Gln Leu Ala Asp Thr Leu
3825   3830   3835   3840

Phe Ser Lys Gly Leu Gly Pro Trp Asp Pro Pro Asp Asn Leu Ala Glu
            3845   3850   3855

Thr Gln Lys Pro Glu Gln Ser Ser Leu Val Pro Gly His Leu Asp Gln
        3860   3865   3870

Val Asn Gly Gln Val Val Pro Glu Ala Ser Gln Leu Ser Ile Lys Gln
        3875   3880   3885

Glu Pro Arg Glu Glu Pro Cys Ala Leu Gly Ala Gln Ser Val Lys Arg
    3890   3895   3900

Glu Ala Asn Gly Glu Pro Ile Gly Ala Pro Gly Thr Ser Asn His Leu
3905   3910   3915   3920

Leu Leu Ala Gly Pro Arg Ser Glu Ala Gly His Leu Leu Leu Gln Lys
            3925   3930   3935

Leu Leu Arg Ala Lys Asn Val Gln Leu Ser Thr Gly Gln Gly Ser Glu
        3940   3945   3950

Gly Leu Arg Ala Glu Ile Asn Gly His Ile Asp Ser Lys Leu Ala Gly
        3955   3960   3965

Leu Glu Gln Lys Leu Gln Gly Thr Pro Ser Asn Lys Glu Asp Ala Ala
    3970   3975   3980

Ala Arg Lys Pro Leu Thr Pro Lys Pro Lys Arg Val Gln Lys Ala Ser
3985   3990   3995   4000

Asp Arg Leu Val Ser Ser Arg Lys Lys Leu Arg Lys Glu Asp Gly Val
                4005   4010   4015

Arg Ala Ser Glu Ala Leu Leu Lys Gln Leu Lys Gln Glu Leu Ser Leu
            4020   4025   4030

Leu Pro Leu Thr Glu Pro Ala Ile Thr Ala Asn Phe Ser Leu Phe Ala
        4035   4040   4045

Pro Phe Gly Ser Gly Cys Pro Val Asn Gly Gln Ser Gln Leu Arg Gly
    4050   4055   4060

Ala Phe Gly Ser Gly Ala Leu Pro Thr Gly Pro Asp Tyr Tyr Ser Gln
4065   4070   4075   4080

Leu Leu Thr Lys Asn Asn Leu Ser Asn Pro Pro Thr Pro Pro Ser Ser
                4085   4090   4095

Leu Pro Pro Thr Pro Pro Ser Val Gln Gln Lys Met Val Asn Gly
            4100   4105   4110

Val Thr Pro Ser Glu Glu Leu Gly Glu His Pro Lys Asp Ala Ala Ser
        4115   4120   4125

Ala Arg Asp Ser Glu Arg Ala Leu Arg Asp Thr Ser Glu Val Lys Ser
    4130   4135   4140

Leu Asp Leu Leu Ala Ala Leu Pro Thr Pro Pro His Asn Gln Thr Glu
4145   4150   4155   4160

Asp Val Arg Met Glu Ser Asp Glu Asp Ser Asp Ser Pro Asp Ser Ile
                4165   4170   4175

Val Pro Ala Ser Ser Pro Glu Ser Ile Leu Gly Glu Glu Ala Pro Arg
            4180   4185   4190

Phe Pro His Leu Gly Ser Gly Arg Trp Glu Gln Glu Asp Arg Ala Leu
        4195   4200   4205

                                294

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Ser Pro Val Ile Pro Leu Ile Pro Arg Asp Ser Ile Pro Val Phe Pro
   4210                4215                4220

Asp Thr Lys Pro Tyr Gly Ala Leu Gly Leu Glu Val Pro Gly Lys Leu
4225                4230                4235                4240

Pro Val Thr Thr Trp Glu Lys Gly Lys Gly Ser Glu Val Ser Val Met
               4245                4250                4255

Leu Thr Val Ser Ala Ala Ala Asp Lys Asn Leu Asn Gly Val Met Val
               4260                4265                4270

Ala Val Ala Glu Leu Leu Ser Met Lys Ile Pro Asn Ser Tyr Glu Val
      4275                4280                4285

Leu Phe Pro Glu Ser Pro Ala Arg Gly Gly Thr Glu Pro Lys Lys Gly
   4290                4295                4300

Glu Ala Glu Gly Pro Gly Gly Lys Glu Lys Gly Leu Glu Gly Lys Ser
4305                4310                4315                4320

Pro Asp Thr Gly Pro Asp Trp Leu Lys Gln Phe Asp Ala Val Leu Ala
               4325                4330                4335

Gly Tyr Thr Leu Lys Arg Gln Leu Asp Ile Leu Ser Leu Leu Lys Gln
         4340                4345                4350

Glu Ser Pro Ala Pro Glu Pro Pro Thr Gln His Arg Tyr Thr Tyr Asn
      4355                4360                4365

Val Ser Asn Leu Asp Val Arg Gln Leu Ser Ala Pro Pro Pro Glu Glu
   4370                4375                4380

Pro Ser Pro Pro Pro Ser Pro Leu Ala Pro Ser Pro Ala Ser Pro Pro
4385                4390                4395                4400

Thr Glu Pro Leu Val Glu Leu Pro Thr Glu Pro Leu Ala Glu Pro Pro
               4405                4410                4415

Val Pro Ser Pro Leu Pro Leu Ala Ser Ser Pro Glu Ser Ala Arg Pro
         4420                4425                4430

Lys Pro Arg Ala Arg Pro Pro Glu Glu Gly Glu Asp Thr Arg Pro Pro
      4435                4440                4445

Arg Leu Lys Lys Trp Lys Gly Val Arg Trp Lys Arg Leu Arg Leu Leu
   4450                4455                4460
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Leu Thr Ile Gln Lys Gly Ser Gly Arg Gln Glu Asp Glu Arg Glu Val
4465              4470              4475              4480

Ala Glu Phe Met Glu Gln Leu Gly Thr Ala Leu Arg Pro Asp Lys Val
             4485              4490              4495

Pro Arg Asp Met Arg Arg Cys Cys Phe Cys His Glu Glu Gly Asp Gly
          4500              4505              4510

Ala Thr Asp Gly Pro Ala Arg Leu Leu Asn Leu Asp Leu Asp Leu Trp
       4515              4520              4525

Val His Leu Asn Cys Ala Leu Trp Ser Thr Glu Val Tyr Glu Thr Gln
       4530              4535              4540

Gly Gly Ala Leu Met Asn Val Glu Val Ala Leu His Arg Gly Leu Leu
4545              4550              4555              4560

Thr Lys Cys Ser Leu Cys Gln Arg Thr Gly Ala Thr Ser Ser Cys Asn
             4565              4570              4575

Arg Met Arg Cys Pro Asn Val Tyr His Phe Gly Cys Ala Ile Arg Ala
          4580              4585              4590

Lys Cys Met Phe Phe Lys Asp Lys Thr Met Leu Cys Pro Met His Lys
       4595              4600              4605

Ile Lys Gly Pro Cys Glu Gln Glu Leu Ser Ser Phe Ala Val Phe Arg
   4610              4615              4620

Arg Val Tyr Ile Glu Arg Asp Glu Val Lys Gln Ile Ala Ser Ile Ile
4625              4630              4635              4640

Gln Arg Gly Glu Arg Leu His Met Phe Arg Val Gly Gly Leu Val Phe
             4645              4650              4655

His Ala Ile Gly Gln Leu Leu Pro His Gln Met Ala Asp Phe His Ser
          4660              4665              4670

Ala Thr Ala Leu Tyr Pro Val Gly Tyr Glu Ala Thr Arg Ile Tyr Trp
       4675              4680              4685

Ser Leu Arg Thr Asn Asn Arg Arg Cys Cys Tyr Arg Cys Ser Ile Gly
   4690              4695              4700

Glu Asn Asn Gly Arg Pro Glu Phe Val Ile Lys Val Ile Glu Gln Gly
4705              4710              4715              4720
```

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Leu Glu Asp Leu Val Phe Thr Asp Ala Ser Pro Gln Ala Val Trp Asn
              4725                4730                4735

Arg Ile Ile Glu Pro Val Ala Ala Met Arg Lys Glu Ala Asp Met Leu
          4740                4745                4750

Arg Leu Phe Pro Glu Tyr Leu Lys Gly Glu Glu Leu Phe Gly Leu Thr
        4755                4760                4765

Val His Ala Val Leu Arg Ile Ala Glu Ser Leu Pro Gly Val Glu Ser
    4770                4775                4780

Cys Gln Asn Tyr Leu Phe Arg Tyr Gly Arg His Pro Leu Met Glu Leu
4785                4790                4795                4800

Pro Leu Met Ile Asn Pro Thr Gly Cys Ala Arg Ser Glu Pro Lys Ile
              4805                4810                4815

Leu Thr His Tyr Lys Arg Pro His Thr Leu Asn Ser Thr Ser Met Ser
          4820                4825                4830

Lys Ala Tyr Gln Ser Thr Phe Thr Gly Glu Thr Asn Thr Pro Tyr Ser
          4835                4840                4845

Lys Gln Phe Val His Ser Lys Ser Ser Gln Tyr Arg Arg Leu Arg Thr
    4850                4855                4860

Glu Trp Lys Asn Asn Val Tyr Leu Ala Arg Ser Arg Ile Gln Gly Leu
4865                4870                4875                4880

Gly Leu Tyr Ala Ala Lys Asp Leu Glu Lys His Thr Met Val Ile Glu
              4885                4890                4895

Tyr Ile Gly Thr Ile Ile Arg Asn Glu Val Ala Asn Arg Arg Glu Lys
          4900                4905                4910

Ile Tyr Glu Glu Gln Asn Arg Gly Ile Tyr Met Phe Arg Ile Asn Asn
          4915                4920                4925

Glu His Val Ile Asp Ala Thr Leu Thr Gly Gly Pro Ala Arg Tyr Ile
    4930                4935                4940

Asn His Ser Cys Ala Pro Asn Cys Val Ala Glu Val Val Thr Phe Asp
4945                4950                4955                4960

Lys Glu Asp Lys Ile Ile Ile Ile Ser Ser Arg Arg Ile Pro Lys Gly
              4965                4970                4975
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Glu Glu Leu Thr Tyr Asp Tyr Gln Phe Asp Phe Glu Asp Asp Gln His
          4980   4985   4990

Glu Ile Pro Cys His Cys Gly Ala Trp Asn Cys Arg Lys Trp Met Asn
       4995   5000   5005

<210> 167
<211> 5262
<212> PRT
<213> Homo sapiens

<400> 167
Met Asp Ser Gln Lys Leu Ala Gly Glu Asp Lys Asp Ser Glu Pro Ala
  1   5   10   15

Ala Asp Gly Pro Ala Ala Ser Glu Asp Pro Ser Ala Thr Glu Ser Asp
          20   25   30

Leu Pro Asn Pro His Val Gly Glu Val Ser Val Leu Ser Ser Gly Ser
       35   40   45

Pro Arg Leu Gln Glu Thr Pro Gln Asp Cys Ser Gly Gly Pro Val Arg
    50   55   60

Arg Cys Ala Leu Cys Asn Cys Gly Glu Pro Ser Leu His Gly Gln Arg
 65   70   75   80

Glu Leu Arg Arg Phe Glu Leu Pro Phe Asp Trp Pro Arg Cys Pro Val
              85   90   95

Val Ser Pro Gly Gly Ser Pro Gly Pro Asn Glu Ala Val Leu Pro Ser
          100   105   110

Glu Asp Leu Ser Gln Ile Gly Phe Pro Glu Gly Leu Thr Pro Ala His
       115   120   125

Leu Gly Glu Pro Gly Gly Ser Cys Trp Ala His His Trp Cys Ala Ala
       130   135   140

Trp Ser Ala Gly Val Trp Gly Gln Glu Gly Pro Glu Leu Cys Gly Val
145   150   155   160

Asp Lys Ala Ile Phe Ser Gly Ile Ser Gln Arg Cys Ser His Cys Thr

                              298

Arg Leu Gly Ala Ser Ile Pro Cys Arg Ser Pro Gly Cys Pro Arg Leu
180 185 190

Tyr His Phe Pro Cys Ala Thr Ala Ser Gly Ser Phe Leu Ser Met Lys
195 200 205

Thr Leu Gln Leu Leu Cys Pro Glu His Ser Glu Gly Ala Ala Tyr Leu
210 215 220

Glu Glu Ala Arg Cys Ala Val Cys Glu Gly Pro Gly Glu Leu Cys Asp
225 230 235 240

Leu Phe Phe Cys Thr Ser Cys Gly His His Tyr His Gly Ala Cys Leu
245 250 255

Asp Thr Ala Leu Thr Ala Arg Lys Arg Ala Gly Trp Gln Cys Pro Glu
260 265 270

Cys Lys Val Cys Gln Ala Cys Arg Lys Pro Gly Asn Asp Ser Lys Met
275 280 285

Leu Val Cys Glu Thr Cys Asp Lys Gly Tyr His Thr Phe Cys Leu Lys
290 295 300

Pro Pro Met Glu Glu Leu Pro Ala His Ser Trp Lys Cys Lys Ala Cys
305 310 315 320

Arg Val Cys Arg Ala Cys Gly Ala Gly Ser Ala Glu Leu Asn Pro Asn
325 330 335

Ser Glu Trp Phe Glu Asn Tyr Ser Leu Cys His Arg Cys His Lys Ala
340 345 350

Gln Gly Gly Gln Thr Ile Arg Ser Val Ala Glu Gln His Thr Pro Val
355 360 365

Cys Ser Arg Phe Ser Pro Pro Glu Pro Gly Asp Thr Pro Thr Asp Glu
370 375 380

Pro Asp Ala Leu Tyr Val Ala Cys Gln Gly Gln Pro Lys Gly Gly His
385 390 395 400

Val Thr Ser Met Gln Pro Lys Glu Pro Gly Pro Leu Gln Cys Glu Ala
405 410 415

Lys Pro Leu Gly Lys Ala Gly Val Gln Leu Glu Pro Gln Leu Glu Ala

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                420                      425                      430

Pro Leu Asn Glu Glu Met Pro Leu Leu Pro Pro Pro Glu Glu Ser Pro
        435                  440                  445

Leu Ser Pro Pro Pro Glu Glu Ser Pro Thr Ser Pro Pro Pro Glu Ala
        450                  455                  460

Ser Arg Leu Ser Pro Pro Pro Glu Glu Leu Pro Ala Ser Pro Leu Pro
465                  470                  475                  480

Glu Ala Leu His Leu Ser Arg Pro Leu Glu Glu Ser Pro Leu Ser Pro
                485                  490                  495

Pro Pro Glu Glu Ser Pro Leu Ser Pro Pro Glu Ser Ser Pro Phe
            500                  505                  510

Ser Pro Leu Glu Glu Ser Pro Leu Ser Pro Glu Glu Ser Pro Pro
        515                  520                  525

Ser Pro Ala Leu Glu Thr Pro Leu Ser Pro Pro Pro Glu Ala Ser Pro
        530                  535                  540

Leu Ser Pro Pro Phe Glu Glu Ser Pro Leu Ser Pro Pro Pro Glu Glu
545                  550                  555                  560

Leu Pro Thr Ser Pro Pro Pro Glu Ala Ser Arg Leu Ser Pro Pro Pro
                565                  570                  575

Glu Glu Ser Pro Met Ser Pro Pro Pro Glu Glu Ser Pro Met Ser Pro
            580                  585                  590

Pro Pro Glu Ala Ser Arg Leu Phe Pro Pro Phe Glu Glu Ser Pro Leu
        595                  600                  605

Ser Pro Pro Pro Glu Glu Ser Pro Leu Ser Pro Pro Pro Glu Ala Ser
        610                  615                  620

Arg Leu Ser Pro Pro Pro Glu Asp Ser Pro Met Ser Pro Pro Pro Glu
625                  630                  635                  640

Glu Ser Pro Met Ser Pro Pro Pro Glu Val Ser Arg Leu Ser Pro Leu
                645                  650                  655

Pro Val Val Ser Arg Leu Ser Pro Pro Pro Glu Glu Ser Pro Leu Ser
            660                  665                  670

Pro Pro Ala Leu Ser Pro Leu Gly Glu Leu Glu Tyr Pro Phe Gly Ala

                            300
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Lys Gly Asp Ser Asp Pro Glu Ser Pro Leu Ala Ala Pro Ile Leu Glu
    690   695   700

Thr Pro Ile Ser Pro Pro Pro Glu Ala Asn Cys Thr Asp Pro Glu Pro
705   710   715   720

Val Pro Pro Met Ile Leu Pro Pro Ser Pro Gly Ser Pro Val Gly Pro
                725   730   735

Ala Ser Pro Ile Leu Met Glu Pro Leu Pro Pro Gln Cys Ser Pro Leu
            740   745   750

Leu Gln His Ser Leu Val Pro Gln Asn Ser Pro Pro Ser Gln Cys Ser
        755   760   765

Pro Pro Ala Leu Pro Leu Ser Val Pro Ser Pro Leu Ser Pro Ile Gly
    770   775   780

Lys Val Val Gly Val Ser Asp Glu Ala Glu Leu His Glu Met Glu Thr
785   790   795   800

Glu Lys Val Ser Glu Pro Glu Cys Pro Ala Leu Glu Pro Ser Ala Thr
                805   810   815

Ser Pro Leu Pro Ser Pro Met Gly Asp Leu Ser Cys Pro Ala Pro Ser
            820   825   830

Pro Ala Pro Ala Leu Asp Asp Phe Ser Gly Leu Gly Glu Asp Thr Ala
        835   840   845

Pro Leu Asp Gly Ile Asp Ala Pro Gly Ser Gln Pro Glu Pro Gly Gln
    850   855   860

Thr Pro Gly Ser Leu Ala Ser Glu Leu Lys Gly Ser Pro Val Leu Leu
865   870   875   880

Asp Pro Glu Glu Leu Ala Pro Val Thr Pro Met Glu Val Tyr Pro Glu
                885   890   895

Cys Lys Gln Thr Ala Gly Gln Gly Ser Pro Cys Glu Glu Gln Glu Glu
            900   905   910

Pro Arg Ala Pro Val Ala Pro Thr Pro Pro Thr Leu Ile Lys Ser Asp
        915   920   925

Ile Val Asn Glu Ile Ser Asn Leu Ser Gln Gly Asp Ala Ser Ala Ser

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        930                 935                 940

Phe Pro Gly Ser Glu Pro Leu Leu Gly Ser Pro Asp Pro Glu Gly Gly
945                 950                 955                 960

Gly Ser Leu Ser Met Glu Leu Gly Val Ser Thr Asp Val Ser Pro Ala
                965                 970                 975

Arg Asp Glu Gly Ser Leu Arg Leu Cys Thr Asp Ser Leu Pro Glu Thr
            980                 985                 990

Asp Asp Ser Leu Leu Cys Asp Ala Gly Thr Ala Ile Ser Gly Gly Lys
        995                 1000                1005

Ala Glu Gly Glu Lys Gly Arg Arg Arg Ser Ser Pro Ala Arg Ser Arg
    1010                1015                1020

Ile Lys Gln Gly Arg Ser Ser Ser Phe Pro Gly Arg Arg Arg Pro Arg
1025                1030                1035                1040

Gly Gly Ala His Gly Gly Arg Gly Arg Gly Arg Ala Arg Leu Lys Ser
                1045                1050                1055

Thr Ala Ser Ser Ile Glu Thr Leu Val Val Ala Asp Ile Asp Ser Ser
            1060                1065                1070

Pro Ser Lys Glu Glu Glu Glu Glu Asp Asp Asp Thr Met Gln Asn Thr
        1075                1080                1085

Val Val Leu Phe Ser Asn Thr Asp Lys Phe Val Leu Met Gln Asp Met
    1090                1095                1100

Cys Val Val Cys Gly Ser Phe Gly Arg Gly Ala Glu Gly His Leu Leu
1105                1110                1115                1120

Ala Cys Ser Gln Cys Ser Gln Cys Tyr His Pro Tyr Cys Val Asn Ser
                1125                1130                1135

Lys Ile Thr Lys Val Met Leu Leu Lys Gly Trp Arg Cys Val Glu Cys
            1140                1145                1150

Ile Val Cys Glu Val Cys Gly Gln Ala Ser Asp Pro Ser Arg Leu Leu
        1155                1160                1165

Leu Cys Asp Asp Cys Asp Ile Ser Tyr His Thr Tyr Cys Leu Asp Pro
    1170                1175                1180

Pro Leu Leu Thr Val Pro Lys Gly Gly Trp Lys Cys Lys Trp Cys Val
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1185              1190              1195              1200

Ser Cys Met Gln Cys Gly Ala Ala Ser Pro Gly Phe His Cys Glu Trp
          1205              1210              1215

Gln Asn Ser Tyr Thr His Cys Gly Pro Cys Ala Ser Leu Val Thr Cys
          1220              1225              1230

Pro Ile Cys His Ala Pro Tyr Val Glu Glu Asp Leu Leu Ile Gln Cys
     1235              1240              1245

Arg His Cys Glu Arg Trp Met His Ala Gly Cys Glu Ser Leu Phe Thr
  1250              1255              1260

Glu Asp Asp Val Glu Gln Ala Ala Asp Glu Gly Phe Asp Cys Val Ser
1265              1270              1275              1280

Cys Gln Pro Tyr Val Val Lys Pro Val Ala Pro Val Ala Pro Pro Glu
          1285              1290              1295

Leu Val Pro Met Lys Val Lys Glu Pro Glu Pro Gln Tyr Phe Arg Phe
          1300              1305              1310

Glu Gly Val Trp Leu Thr Glu Thr Gly Met Ala Leu Leu Arg Asn Leu
     1315              1320              1325

Thr Met Ser Pro Leu His Lys Arg Arg Gln Arg Arg Gly Arg Leu Gly
  1330              1335              1340

Leu Pro Gly Glu Ala Gly Leu Glu Gly Ser Glu Pro Ser Asp Ala Leu
1345              1350              1355              1360

Gly Pro Asp Asp Lys Lys Asp Gly Asp Leu Asp Thr Asp Glu Leu Leu
          1365              1370              1375

Lys Gly Glu Gly Gly Val Glu His Met Glu Cys Glu Ile Lys Leu Glu
          1380              1385              1390

Gly Pro Val Ser Pro Asp Val Glu Pro Gly Lys Glu Glu Thr Glu Glu
     1395              1400              1405

Ser Lys Lys Arg Lys Arg Lys Pro Tyr Arg Pro Gly Ile Gly Gly Phe
  1410              1415              1420

Met Val Arg Gln Arg Lys Ser His Thr Arg Thr Lys Lys Gly Pro Ala
1425              1430              1435              1440

Ala Gln Ala Glu Val Leu Ser Gly Asp Gly Gln Pro Asp Glu Val Ile
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303

Pro Ala Asp Leu Pro Ala Glu Gly Ala Val Glu Gln Ser Leu Ala Glu
 1460 1465 1470

Gly Asp Glu Lys Lys Lys Gln Gln Arg Arg Gly Arg Lys Lys Ser Lys
 1475 1480 1485

Leu Glu Asp Met Phe Pro Ala Tyr Leu Gln Glu Ala Phe Phe Gly Lys
 1490 1495 1500

Glu Leu Leu Asp Leu Ser Arg Lys Ala Leu Phe Ala Val Gly Val Gly
1505 1510 1515 1520

Arg Pro Ser Phe Gly Leu Gly Thr Pro Lys Ala Lys Gly Asp Gly Gly
  1525 1530 1535

Ser Glu Arg Lys Glu Leu Pro Thr Ser Gln Lys Gly Asp Asp Gly Pro
  1540 1545 1550

Asp Ile Ala Asp Glu Glu Ser Arg Gly Leu Glu Gly Lys Ala Asp Thr
  1555 1560 1565

Pro Gly Pro Glu Asp Gly Gly Val Lys Ala Ser Pro Val Pro Ser Asp
 1570 1575 1580

Pro Glu Lys Pro Gly Thr Pro Gly Glu Gly Met Leu Ser Ser Asp Leu
1585 1590 1595 1600

Asp Arg Ile Ser Thr Glu Glu Leu Pro Lys Met Glu Ser Lys Asp Leu
  1605 1610 1615

Gln Gln Leu Phe Lys Asp Val Leu Gly Ser Glu Arg Glu Gln His Leu
  1620 1625 1630

Gly Cys Gly Thr Pro Gly Leu Glu Gly Ser Arg Thr Pro Leu Gln Arg
 1635 1640 1645

Pro Phe Leu Gln Gly Gly Leu Pro Leu Gly Asn Leu Pro Ser Ser Ser
 1650 1655 1660

Pro Met Asp Ser Tyr Pro Gly Leu Cys Gln Ser Pro Phe Leu Asp Ser
1665 1670 1675 1680

Arg Glu Arg Gly Gly Phe Phe Ser Pro Glu Pro Gly Glu Pro Asp Ser
  1685 1690 1695

Pro Trp Thr Gly Ser Gly Gly Thr Thr Pro Ser Thr Pro Thr Thr Pro

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            1700                1705                    1710

Thr Thr Glu Gly Glu Gly Asp Gly Leu Ser Tyr Asn Gln Arg Ser Leu
         1715                1720                    1725

Gln Arg Trp Glu Lys Asp Glu Glu Leu Gly Gln Leu Ser Thr Ile Ser
     1730                1735                    1740

Pro Val Leu Tyr Ala Asn Ile Asn Phe Pro Asn Leu Lys Gln Asp Tyr
1745                1750                    1755                1760

Pro Asp Trp Ser Ser Arg Cys Lys Gln Ile Met Lys Leu Trp Arg Lys
              1765                1770                    1775

Val Pro Ala Ala Asp Lys Ala Pro Tyr Leu Gln Lys Ala Lys Asp Asn
            1780                1785                    1790

Arg Ala Ala His Arg Ile Asn Lys Val Gln Lys Gln Ala Glu Ser Gln
       1795                1800                    1805

Ile Asn Lys Gln Thr Lys Val Gly Asp Ile Ala Arg Lys Thr Asp Arg
   1810                1815                    1820

Pro Ala Leu His Leu Arg Ile Pro Pro Gln Pro Gly Ala Leu Gly Ser
1825                1830                    1835                1840

Pro Pro Pro Ala Ala Ala Pro Thr Ile Phe Ile Gly Ser Pro Thr Thr
              1845                1850                    1855

Pro Ala Gly Leu Ser Thr Ser Ala Asp Gly Phe Leu Lys Pro Pro Ala
         1860                1865                    1870

Gly Ser Val Pro Gly Pro Asp Ser Pro Gly Glu Leu Phe Leu Lys Leu
       1875                1880                    1885

Pro Pro Gln Val Pro Ala Gln Val Pro Ser Gln Asp Pro Phe Gly Leu
   1890                1895                    1900

Ala Pro Ala Tyr Pro Leu Glu Pro Arg Phe Pro Thr Ala Pro Pro Thr
1905                1910                    1915                1920

Tyr Pro Pro Tyr Pro Ser Pro Thr Gly Ala Pro Ala Gln Pro Pro Met
              1925                1930                    1935

Leu Gly Ala Ser Ser Arg Pro Gly Ala Gly Gln Pro Gly Glu Phe His
         1940                1945                    1950

Thr Thr Pro Pro Gly Thr Pro Arg His Gln Pro Ser Thr Pro Asp Pro
                          305
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                1955                    1960                    1965

Phe Leu Lys Pro Arg Cys Pro Ser Leu Asp Asn Leu Ala Val Pro Glu
    1970                    1975                    1980

Ser Pro Gly Val Gly Gly Gly Lys Ala Ser Glu Pro Leu Leu Ser Pro
1985                    1990                    1995                    2000

Pro Pro Phe Gly Glu Ser Arg Lys Ala Leu Glu Val Lys Lys Glu Glu
                2005                    2010                    2015

Leu Gly Ala Ser Ser Pro Ser Tyr Gly Pro Pro Asn Leu Gly Phe Val
            2020                    2025                    2030

Asp Ser Pro Ser Ser Gly Thr His Leu Gly Gly Leu Glu Leu Lys Thr
        2035                    2040                    2045

Pro Asp Val Phe Lys Ala Pro Leu Thr Pro Arg Ala Ser Gln Val Glu
    2050                    2055                    2060

Pro Gln Ser Pro Gly Leu Gly Leu Arg Pro Gln Glu Pro Pro Pro Ala
2065                    2070                    2075                    2080

Gln Ala Leu Ala Pro Ser Pro Pro Ser His Pro Asp Ile Phe Arg Pro
            2085                    2090                    2095

Gly Ser Tyr Thr Asp Pro Tyr Ala Gln Pro Pro Leu Thr Pro Arg Pro
        2100                    2105                    2110

Gln Pro Pro Pro Pro Glu Ser Cys Cys Ala Leu Pro Pro Arg Ser Leu
        2115                    2120                    2125

Pro Ser Asp Pro Phe Ser Arg Val Pro Ala Ser Pro Gln Ser Gln Ser
    2130                    2135                    2140

Ser Ser Gln Ser Pro Leu Thr Pro Arg Pro Leu Ser Ala Glu Ala Phe
2145                    2150                    2155                    2160

Cys Pro Ser Pro Val Thr Pro Arg Phe Gln Ser Pro Asp Pro Tyr Ser
            2165                    2170                    2175

Arg Pro Pro Ser Arg Pro Gln Ser Arg Asp Pro Phe Ala Pro Leu His
        2180                    2185                    2190

Lys Pro Pro Arg Pro Gln Pro Pro Glu Val Ala Phe Lys Ala Gly Ser
        2195                    2200                    2205

Leu Ala His Thr Ser Leu Gly Ala Gly Glu Phe Pro Ala Ala Leu Pro

                                306
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                2210                    2215                    2220

Ala Gly Pro Ala Gly Glu Leu His Ala Lys Val Pro Ser Gly Gln Pro
2225                2230                    2235                    2240

Pro Asn Phe Val Arg Ser Pro Gly Thr Gly Ala Phe Val Gly Thr Pro
                2245                    2250                    2255

Ser Pro Met Arg Phe Thr Phe Pro Gln Ala Val Gly Glu Pro Ser Leu
            2260                    2265                    2270

Lys Pro Pro Val Pro Gln Pro Gly Leu Pro Pro Pro His Gly Ile Asn
        2275                    2280                    2285

Ser His Phe Gly Pro Gly Pro Thr Leu Gly Lys Pro Gln Ser Thr Asn
    2290                    2295                    2300

Tyr Thr Val Ala Thr Gly Asn Phe His Pro Ser Gly Ser Pro Leu Gly
2305                2310                    2315                    2320

Pro Ser Ser Gly Ser Thr Gly Glu Ser Tyr Gly Leu Ser Pro Leu Arg
                2325                    2330                    2335

Pro Pro Ser Val Leu Pro Pro Pro Ala Pro Asp Gly Ser Leu Pro Tyr
            2340                    2345                    2350

Leu Ser His Gly Ala Ser Gln Arg Ser Gly Ile Thr Ser Pro Val Glu
        2355                    2360                    2365

Lys Arg Glu Asp Pro Gly Thr Gly Met Gly Ser Ser Leu Ala Thr Ala
    2370                    2375                    2380

Glu Leu Pro Gly Thr Gln Asp Pro Gly Met Ser Gly Leu Ser Gln Thr
2385                2390                    2395                    2400

Glu Leu Glu Lys Gln Arg Gln Arg Gln Arg Leu Arg Glu Leu Leu Ile
                2405                    2410                    2415

Arg Gln Gln Ile Gln Arg Asn Thr Leu Arg Gln Glu Lys Glu Thr Ala
            2420                    2425                    2430

Ala Ala Ala Ala Gly Ala Val Gly Pro Pro Gly Ser Trp Gly Ala Glu
        2435                    2440                    2445

Pro Ser Ser Pro Ala Phe Glu Gln Leu Ser Arg Gly Gln Thr Pro Phe
    2450                    2455                    2460

Ala Gly Thr Gln Asp Lys Ser Ser Leu Val Gly Leu Pro Pro Ser Lys
                            307
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Leu Ser Gly Pro Ile Leu Gly Pro Gly Ser Phe Pro Ser Asp Asp Arg
          2485   2490   2495

Leu Ser Arg Pro Pro Pro Pro Ala Thr Pro Ser Ser Met Asp Val Asn
        2500   2505   2510

Ser Arg Gln Leu Val Gly Gly Ser Gln Ala Phe Tyr Gln Arg Ala Pro
      2515   2520   2525

Tyr Pro Gly Ser Leu Pro Leu Gln Gln Gln Gln Gln Gln Leu Trp Gln
    2530   2535   2540

Gln Gln Gln Ala Thr Ala Ala Thr Ser Met Arg Phe Ala Met Ser Ala
2545   2550   2555   2560

Arg Phe Pro Ser Thr Pro Gly Pro Glu Leu Gly Arg Gln Ala Leu Gly
              2565   2570   2575

Ser Pro Leu Ala Gly Ile Ser Thr Arg Leu Pro Gly Pro Gly Glu Pro
          2580   2585   2590

Val Pro Gly Pro Ala Gly Pro Ala Gln Phe Ile Glu Leu Arg His Asn
      2595   2600   2605

Val Gln Lys Gly Leu Gly Pro Gly Gly Thr Pro Phe Pro Gly Gln Gly
    2610   2615   2620

Pro Pro Gln Arg Pro Arg Phe Tyr Pro Val Ser Glu Asp Pro His Arg
2625   2630   2635   2640

Leu Ala Pro Glu Gly Leu Arg Gly Leu Ala Val Ser Gly Leu Pro Pro
            2645   2650   2655

Gln Lys Pro Ser Ala Pro Pro Ala Pro Glu Leu Asn Asn Ser Leu His
          2660   2665   2670

Pro Thr Pro His Thr Lys Gly Pro Thr Leu Pro Thr Gly Leu Glu Leu
      2675   2680   2685

Val Asn Arg Pro Pro Ser Ser Thr Glu Leu Gly Arg Pro Asn Pro Leu
    2690   2695   2700

Ala Leu Glu Ala Gly Lys Leu Pro Cys Glu Asp Pro Glu Leu Asp Asp
2705   2710   2715   2720

Asp Phe Asp Ala His Lys Ala Leu Glu Asp Asp Glu Glu Leu Ala His

Leu Gly Leu Gly Val Asp Val Ala Lys Gly Asp Asp Glu Leu Gly Thr
   2740   2745   2750

Leu Glu Asn Leu Glu Thr Asn Asp Pro His Leu Asp Asp Leu Leu Asn
  2755   2760   2765

Gly Asp Glu Phe Asp Leu Leu Ala Tyr Thr Asp Pro Glu Leu Asp Thr
 2770   2775   2780

Gly Asp Lys Lys Asp Ile Phe Asn Glu His Leu Arg Leu Val Glu Ser
2785   2790   2795   2800

Ala Asn Glu Lys Ala Glu Arg Glu Ala Leu Leu Arg Gly Val Glu Pro
   2805   2810   2815

Gly Pro Leu Gly Pro Glu Glu Arg Pro Pro Pro Ala Ala Asp Ala Ser
   2820   2825   2830

Glu Pro Arg Leu Ala Ser Val Leu Pro Glu Val Lys Pro Lys Val Glu
  2835   2840   2845

Glu Gly Gly Arg His Pro Ser Pro Cys Gln Phe Thr Ile Ala Thr Pro
 2850   2855   2860

Lys Val Glu Pro Ala Pro Ala Ala Asn Ser Leu Gly Leu Gly Leu Lys
2865   2870   2875   2880

Pro Gly Gln Ser Met Met Gly Ser Arg Asp Thr Arg Met Gly Thr Gly
   2885   2890   2895

Pro Phe Ser Ser Ser Gly His Thr Ala Glu Lys Ala Ser Phe Gly Ala
   2900   2905   2910

Thr Gly Gly Pro Pro Ala His Leu Leu Thr Pro Ser Pro Leu Ser Gly
  2915   2920   2925

Pro Gly Gly Ser Ser Leu Leu Glu Lys Phe Glu Leu Glu Ser Gly Ala
  2930   2935   2940

Leu Thr Leu Pro Gly Gly Pro Ala Ala Ser Gly Asp Glu Leu Asp Lys
2945   2950   2955   2960

Met Glu Ser Ser Leu Val Ala Ser Glu Leu Pro Leu Leu Ile Glu Asp
   2965   2970   2975

Leu Leu Glu His Glu Lys Lys Glu Leu Gln Lys Lys Gln Gln Leu Ser

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                                                      2990
              2980              2985
Ala Gln Leu Gln Pro Ala Gln Gln Gln Gln Gln Gln Gln Gln His
        2995              3000                   3005

Ser Leu Leu Ser Ala Pro Gly Pro Ala Gln Ala Met Ser Leu Pro His
        3010              3015                   3020

Glu Gly Ser Ser Pro Ser Leu Ala Gly Ser Gln Gln Gln Leu Ser Leu
3025              3030              3035                   3040

Gly Leu Ala Gly Ala Arg Gln Pro Gly Leu Pro Gln Pro Leu Met Pro
              3045              3050                   3055

Thr Gln Pro Pro Ala His Ala Leu Gln Gln Arg Leu Ala Pro Ser Met
           3060              3065                   3070

Ala Met Val Ser Asn Gln Gly His Met Leu Ser Gly Gln His Gly Gly
        3075              3080                   3085

Gln Ala Gly Leu Val Pro Gln Gln Ser Ser Gln Pro Val Leu Ser Gln
        3090              3095                   3100

Lys Pro Met Gly Thr Met Pro Pro Ser Met Cys Met Lys Pro Gln Gln
3105              3110                   3115                   3120

Leu Ala Met Gln Gln Gln Leu Ala Asn Ser Phe Phe Pro Asp Thr Asp
              3125              3130                   3135

Leu Asp Lys Phe Ala Ala Glu Asp Ile Ile Asp Pro Ile Ala Lys Ala
           3140              3145                   3150

Lys Met Val Ala Leu Lys Gly Ile Lys Lys Val Met Ala Gln Gly Ser
        3155              3160                   3165

Ile Gly Val Ala Pro Gly Met Asn Arg Gln Gln Val Ser Leu Leu Ala
     3170              3175                   3180

Gln Arg Leu Ser Gly Gly Pro Ser Ser Asp Leu Gln Asn His Val Ala
3185              3190                   3195                   3200

Ala Gly Ser Gly Gln Glu Arg Ser Ala Gly Asp Pro Ser Gln Pro Arg
              3205              3210                   3215

Pro Asn Pro Pro Thr Phe Ala Gln Gly Val Ile Asn Glu Ala Asp Gln
           3220              3225                   3230

Arg Gln Tyr Glu Glu Trp Leu Phe His Thr Gln Gln Leu Leu Gln Met
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3235   3240   3245

Gln Leu Lys Val Leu Glu Glu Gln Ile Gly Val His Arg Lys Ser Arg
    3250   3255   3260

Lys Ala Leu Cys Ala Lys Gln Arg Thr Ala Lys Lys Ala Gly Arg Glu
3265   3270   3275   3280

Phe Pro Glu Ala Asp Ala Glu Lys Leu Lys Leu Val Thr Glu Gln Gln
                3285   3290   3295

Ser Lys Ile Gln Lys Gln Leu Asp Gln Val Arg Lys Gln Gln Lys Glu
            3300   3305   3310

His Thr Asn Leu Met Ala Glu Tyr Arg Asn Lys Gln Gln Gln Gln Gln
        3315   3320   3325

Gln Gln Gln Gln Gln Gln Gln Gln Gln His Ser Ala Val Leu Ala Leu
    3330   3335   3340

Ser Pro Ser Gln Ser Pro Arg Leu Leu Thr Lys Leu Pro Gly Gln Leu
3345   3350   3355   3360

Leu Pro Gly His Gly Leu Gln Pro Pro Gln Gly Pro Pro Gly Gly Gln
            3365   3370   3375

Ala Gly Gly Leu Arg Leu Thr Pro Gly Gly Met Ala Leu Pro Gly Gln
        3380   3385   3390

Pro Gly Gly Pro Phe Leu Asn Thr Ala Leu Ala Gln Gln Gln Gln Gln
    3395   3400   3405

Gln His Ser Gly Gly Ala Gly Ser Leu Ala Gly Pro Ser Gly Gly Phe
    3410   3415   3420

Phe Pro Gly Asn Leu Ala Leu Arg Ser Leu Gly Pro Asp Ser Arg Leu
3425   3430   3435   3440

Leu Gln Glu Arg Gln Leu Gln Leu Gln Gln Gln Arg Met Gln Leu Ala
                3445   3450   3455

Gln Lys Leu Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln His Leu
            3460   3465   3470

Leu Gly Gln Val Ala Ile Gln Gln Gln Gln Gln Gln Gly Pro Gly Val
        3475   3480   3485

Gln Thr Asn Gln Ala Leu Gly Pro Lys Pro Gln Gly Leu Met Pro Pro

311

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        3490                    3495                    3500

Ser Ser His Gln Gly Leu Leu Val Gln Gln Leu Ser Pro Gln Pro Pro
3505              3510                3515                3520

Gln Gly Pro Gln Gly Met Leu Gly Pro Ala Gln Val Ala Val Leu Gln
            3525                3530                3535

Gln Gln His Pro Gly Ala Leu Gly Pro Gln Gly Pro His Arg Gln Val
          3540                3545                3550

Leu Met Thr Gln Ser Arg Val Leu Ser Ser Pro Gln Leu Ala Gln Gln
        3555                3560                3565

Gly Gln Gly Leu Met Gly His Arg Leu Val Thr Ala Gln Gln Gln Gln
    3570                3575                3580

Gln Gln Gln Gln His Gln Gln Gln Gly Ser Met Ala Gly Leu Ser His
3585              3590                3595                3600

Leu Gln Gln Ser Leu Met Ser His Ser Gly Gln Pro Lys Leu Ser Ala
            3605                3610                3615

Gln Pro Met Gly Ser Leu Gln Gln Leu Gln Gln Gln Gln Gln Leu Gln
          3620                3625                3630

Gln Gln Gln Gln Leu Gln Gln Gln Gln Gln Gln Gln Leu Gln Gln Gln
    3635                3640                3645

Gln Gln Leu Gln Gln Gln Gln Leu Gln Gln Gln Gln Gln Gln Gln Gln
    3650                3655                3660

Leu Gln Gln Gln Gln Gln Gln Gln Leu Gln Gln Gln Gln Gln Gln Leu
3665              3670                3675                3680

Gln Gln Gln Gln Gln Gln Gln Gln Gln Phe Gln Gln Gln Gln Gln
            3685                3690                3695

Gln Gln Gln Met Gly Leu Leu Asn Gln Ser Arg Thr Leu Leu Ser Pro
          3700                3705                3710

Gln Gln Gln Gln Gln Gln Gln Val Ala Leu Gly Pro Gly Met Pro Ala
    3715                3720                3725

Lys Pro Leu Gln His Phe Ser Ser Pro Gly Ala Leu Gly Pro Thr Leu
    3730                3735                3740

Leu Leu Thr Gly Lys Glu Gln Asn Thr Val Asp Pro Ala Val Ser Ser
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Glu Ala Thr Glu Gly Pro Ser Thr His Gln Gly Gly Pro Leu Ala Ile
                    3765   3770   3775

Gly Thr Thr Pro Glu Ser Met Ala Thr Glu Pro Gly Glu Val Lys Pro
            3780   3785   3790

Ser Leu Ser Gly Asp Ser Gln Leu Leu Leu Val Gln Pro Gln Pro Gln
        3795   3800   3805

Pro Gln Pro Ser Ser Leu Gln Leu Gln Pro Pro Leu Arg Leu Pro Gly
    3810   3815   3820

Gln Gln Gln Gln Gln Val Ser Leu Leu His Thr Ala Gly Gly Gly Ser
3825   3830   3835   3840

His Gly Gln Leu Gly Ser Gly Ser Ser Ser Glu Ala Ser Ser Val Pro
                3845   3850   3855

His Leu Leu Ala Gln Pro Ser Val Ser Leu Gly Asp Gln Pro Gly Ser
            3860   3865   3870

Met Thr Gln Asn Leu Leu Gly Pro Gln Gln Pro Met Leu Glu Arg Pro
        3875   3880   3885

Met Gln Asn Asn Thr Gly Pro Gln Pro Pro Lys Pro Gly Pro Val Leu
    3890   3895   3900

Gln Ser Gly Gln Gly Leu Pro Gly Val Gly Ile Met Pro Thr Val Gly
3905   3910   3915   3920

Gln Leu Arg Ala Gln Leu Gln Gly Val Leu Ala Lys Asn Pro Gln Leu
                3925   3930   3935

Arg His Leu Ser Pro Gln Gln Gln Gln Gln Leu Gln Ala Leu Leu Met
            3940   3945   3950

Gln Arg Gln Leu Gln Gln Ser Gln Ala Val Arg Gln Thr Pro Pro Tyr
        3955   3960   3965

Gln Glu Pro Gly Thr Gln Thr Ser Pro Leu Gln Gly Leu Leu Gly Cys
        3970   3975   3980

Gln Pro Gln Leu Gly Gly Phe Pro Gly Pro Gln Thr Gly Pro Leu Gln
3985   3990   3995   4000

Glu Leu Gly Ala Gly Pro Arg Pro Gln Gly Pro Pro Arg Leu Pro Ala

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                4005                    4010                    4015

Pro Pro Gly Ala Leu Ser Thr Gly Pro Val Leu Gly Pro Val His Pro
            4020                    4025                    4030

Thr Pro Pro Pro Ser Ser Pro Gln Glu Pro Lys Arg Pro Ser Gln Leu
        4035                    4040                    4045

Pro Ser Pro Ser Ser Gln Leu Pro Thr Glu Ala Gln Leu Pro Pro Thr
    4050                    4055                    4060

His Pro Gly Thr Pro Lys Pro Gln Gly Pro Thr Leu Glu Pro Pro Pro
4065                    4070                    4075                    4080

Gly Arg Val Ser Pro Ala Ala Ala Gln Leu Ala Asp Thr Leu Phe Ser
            4085                    4090                    4095

Lys Gly Leu Gly Pro Trp Asp Pro Pro Asp Asn Leu Ala Glu Thr Gln
        4100                    4105                    4110

Lys Pro Glu Gln Ser Ser Leu Val Pro Gly His Leu Asp Gln Val Asn
    4115                    4120                    4125

Gly Gln Val Val Pro Glu Ala Ser Gln Leu Ser Ile Lys Gln Glu Pro
    4130                    4135                    4140

Arg Glu Glu Pro Cys Ala Leu Gly Ala Gln Ser Val Lys Arg Glu Ala
4145                    4150                    4155                    4160

Asn Gly Glu Pro Ile Gly Ala Pro Gly Thr Ser Asn His Leu Leu Leu
            4165                    4170                    4175

Ala Gly Pro Arg Ser Glu Ala Gly His Leu Leu Leu Gln Lys Leu Leu
        4180                    4185                    4190

Arg Ala Lys Asn Val Gln Leu Ser Thr Gly Arg Gly Ser Glu Gly Leu
        4195                    4200                    4205

Arg Ala Glu Ile Asn Gly His Ile Asp Ser Lys Leu Ala Gly Leu Glu
    4210                    4215                    4220

Gln Lys Leu Gln Gly Thr Pro Ser Asn Lys Glu Asp Ala Ala Ala Arg
4225                    4230                    4235                    4240

Lys Pro Leu Thr Pro Lys Pro Lys Arg Val Gln Lys Ala Ser Asp Arg
            4245                    4250                    4255

Leu Val Ser Ser Arg Lys Lys Leu Arg Lys Glu Asp Gly Val Arg Ala
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                                                          4270
            4260                    4265
Ser Glu Ala Leu Leu Lys Gln Leu Lys Gln Glu Leu Ser Leu Leu Pro
        4275                    4280                    4285

Leu Thr Glu Pro Ala Ile Thr Ala Asn Phe Ser Leu Phe Ala Pro Phe
     4290                    4295                    4300

Gly Ser Gly Cys Pro Val Asn Gly Gln Ser Gln Leu Arg Gly Ala Phe
4305                    4310                    4315                    4320

Gly Ser Gly Ala Leu Pro Thr Gly Pro Asp Tyr Tyr Ser Gln Leu Leu
              4325                    4330                    4335

Thr Lys Asn Asn Leu Ser Asn Pro Pro Thr Pro Pro Ser Ser Leu Pro
           4340                    4345                    4350

Pro Thr Pro Pro Pro Ser Val Gln Gln Lys Met Val Asn Gly Val Thr
        4355                    4360                    4365

Pro Ser Glu Glu Leu Gly Glu His Pro Lys Asp Ala Ala Ser Ala Arg
     4370                    4375                    4380

Asp Ser Glu Arg Ala Leu Arg Asp Thr Ser Glu Val Lys Ser Leu Asp
4385                    4390                    4395                    4400

Leu Leu Ala Ala Leu Pro Thr Pro Pro His Asn Gln Thr Glu Asp Val
              4405                    4410                    4415

Arg Met Glu Ser Asp Glu Asp Ser Asp Ser Pro Asp Ser Ile Val Pro
           4420                    4425                    4430

Ala Ser Ser Pro Glu Ser Ile Leu Gly Glu Glu Ala Pro Arg Phe Pro
     4435                    4440                    4445

His Leu Gly Ser Gly Arg Trp Glu Gln Glu Asp Arg Ala Leu Ser Pro
  4450                    4455                    4460

Val Ile Pro Leu Ile Pro Arg Ala Ser Ile Pro Val Phe Pro Asp Thr
4465                    4470                    4475                    4480

Lys Pro Tyr Gly Ala Leu Gly Leu Glu Val Pro Gly Lys Leu Pro Val
              4485                    4490                    4495

Thr Thr Trp Glu Lys Gly Lys Gly Ser Glu Val Ser Val Met Leu Thr
           4500                    4505                    4510

Val Ser Ala Ala Ala Ala Lys Asn Leu Asn Gly Val Met Val Ala Val
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315

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          4515                    4520                      4525
Ala Glu Leu Leu Ser Met Lys Ile Pro Asn Ser Tyr Glu Val Leu Phe
   4530                    4535                      4540

Pro Glu Ser Pro Ala Arg Ala Gly Thr Glu Pro Lys Lys Gly Glu Ala
4545                    4550                      4555                      4560

Glu Gly Pro Gly Gly Lys Glu Lys Gly Leu Glu Gly Lys Ser Pro Asp
               4565                    4570                      4575

Thr Gly Pro Asp Trp Leu Lys Gln Phe Asp Ala Val Leu Pro Gly Tyr
          4580                    4585                      4590

Thr Leu Lys Ser Gln Leu Asp Ile Leu Ser Leu Leu Lys Gln Glu Ser
          4595                    4600                      4605

Pro Ala Pro Glu Pro Pro Thr Gln His Ser Tyr Thr Tyr Asn Val Ser
   4610                    4615                      4620

Asn Leu Asp Val Arg Gln Leu Ser Ala Pro Pro Pro Glu Glu Pro Ser
4625                    4630                      4635                      4640

Pro Pro Pro Ser Pro Leu Ala Pro Ser Pro Ala Ser Pro Pro Thr Glu
               4645                    4650                      4655

Pro Leu Val Glu Leu Pro Thr Glu Pro Leu Ala Glu Pro Pro Val Pro
          4660                    4665                      4670

Ser Pro Leu Pro Leu Ala Ser Ser Pro Glu Ser Ala Arg Pro Lys Pro
          4675                    4680                      4685

Arg Ala Arg Pro Pro Glu Glu Gly Glu Asp Ser Arg Pro Pro Arg Leu
   4690                    4695                      4700

Lys Lys Trp Lys Gly Val Arg Trp Lys Arg Leu Arg Leu Leu Leu Thr
4705                    4710                      4715                      4720

Ile Gln Lys Gly Ser Gly Arg Gln Glu Asp Glu Arg Glu Val Ala Glu
               4725                    4730                      4735

Phe Met Glu Gln Leu Gly Thr Ala Leu Arg Pro Asp Lys Val Pro Arg
          4740                    4745                      4750

Asp Met Arg Arg Cys Cys Phe Cys His Glu Glu Gly Asp Gly Ala Thr
          4755                    4760                      4765

Asp Gly Pro Ala Arg Leu Leu Asn Leu Asp Leu Asp Leu Trp Val His
```

316

4770   4775   4780

Leu Asn Cys Ala Leu Trp Ser Thr Glu Val Tyr Glu Thr Gln Gly Gly
4785   4790   4795   4800

Ala Leu Met Asn Val Glu Val Ala Leu His Arg Gly Leu Leu Thr Lys
                    4805   4810   4815

Cys Ser Leu Cys Gln Arg Thr Gly Ala Thr Ser Ser Cys Asn Arg Met
                4820   4825   4830

Arg Cys Pro Asn Val Tyr His Phe Ala Cys Ala Ile Arg Ala Lys Cys
        4835   4840   4845

Met Phe Phe Lys Asp Lys Thr Met Leu Cys Pro Met His Lys Ile Lys
    4850   4855   4860

Gly Pro Cys Glu Gln Glu Leu Ser Ser Phe Ala Val Phe Arg Arg Val
4865   4870   4875   4880

Tyr Ile Glu Arg Asp Glu Val Lys Gln Ile Ala Ser Ile Ile Gln Arg
                4885   4890   4895

Gly Glu Arg Leu His Met Phe Arg Val Gly Gly Leu Val Phe His Ala
            4900   4905   4910

Ile Gly Gln Leu Leu Pro His Gln Met Ala Asp Phe His Ser Ala Thr
        4915   4920   4925

Ala Leu Tyr Pro Val Gly Tyr Glu Ala Thr Arg Ile Tyr Trp Ser Leu
    4930   4935   4940

Arg Thr Asn Asn Arg Arg Cys Cys Tyr Arg Cys Ser Ile Gly Glu Asn
4945   4950   4955   4960

Asn Gly Arg Pro Glu Phe Val Ile Lys Val Ile Glu Gln Gly Leu Glu
                4965   4970   4975

Asp Leu Val Phe Thr Asp Ala Ser Pro Gln Ala Val Trp Asn Arg Ile
            4980   4985   4990

Ile Glu Pro Val Ala Ala Met Arg Lys Glu Ala Asp Met Leu Arg Leu
        4995   5000   5005

Phe Pro Glu Tyr Leu Lys Gly Glu Glu Leu Phe Gly Leu Thr Val His
    5010   5015   5020

Ala Val Leu Arg Ile Ala Glu Ser Leu Pro Gly Val Glu Ser Cys Gln

                                    317

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                5025              5030                5035              5040

Asn Tyr Leu Phe Arg Tyr Gly Arg His Pro Leu Met Glu Leu Pro Leu
                    5045                   5050                   5055

Met Ile Asn Pro Thr Gly Cys Ala Arg Ser Glu Pro Lys Ile Leu Thr
            5060                   5065                   5070

His Tyr Lys Arg Pro His Thr Leu Asn Ser Thr Ser Met Ser Lys Ala
         5075                   5080                   5085

Tyr Gln Ser Thr Phe Thr Gly Glu Thr Asn Thr Pro Tyr Ser Lys Gln
      5090                   5095                   5100

Phe Val His Ser Lys Ser Ser Gln Tyr Arg Arg Leu Arg Thr Glu Trp
5105                   5110                   5115                   5120

Lys Asn Asn Val Tyr Leu Ala Arg Ser Arg Ile Gln Gly Leu Gly Leu
                 5125                   5130                   5135

Tyr Ala Ala Lys Asp Leu Glu Lys His Thr Met Val Ile Glu Tyr Ile
            5140                   5145                   5150

Gly Thr Ile Ile Arg Asn Glu Val Ala Asn Arg Arg Glu Lys Ile Tyr
      5155                   5160                   5165

Glu Glu Gln Asn Arg Gly Ile Tyr Met Phe Arg Ile Asn Asn Glu His
   5170                   5175                   5180

Val Ile Asp Ala Thr Leu Thr Gly Gly Pro Ala Arg Tyr Ile Asn His
5185                   5190                   5195                   5200

Ser Cys Ala Pro Asn Cys Val Ala Glu Val Val Thr Phe Asp Lys Glu
                 5205                   5210                   5215

Asp Lys Ile Ile Ile Ile Ser Ser Arg Arg Ile Pro Lys Gly Glu Glu
            5220                   5225                   5230

Leu Thr Tyr Asp Tyr Gln Phe Asp Phe Glu Asp Asp Gln His Lys Ile
      5235                   5240                   5245

Pro Cys His Cys Gly Ala Trp Asn Cys Arg Lys Trp Met Asn
   5250                   5255                   5260


   <210> 168
   <211> 677
   <212> PRT
                            318
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<213> Mus musculus

<400> 168

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Asn Lys Gly Ser Arg Glu Asn Thr Lys Arg Met Glu Lys Asp Ile Val
 1               5                  10                  15

Phe Cys Ser Asn Asn Cys Phe Ile Leu Tyr Ser Ser Ala Ala Gln Ala
            20                  25                  30

Lys Asn Ser Asp Asn Lys Glu Ser Leu Pro Ser Leu Pro Gln Ser Pro
        35                  40                  45

Met Lys Glu Pro Ser Lys Ala Phe His Gln Tyr Ser Asn Asn Ile Ser
    50                  55                  60

Thr Leu Asp Val His Cys Leu Pro Gln Phe Gln Glu Lys Val Ser Pro
 65                  70                  75                  80

Pro Ala Ser Pro Pro Ile Ser Phe Pro Pro Ala Phe Glu Ala Ala Lys
                85                  90                  95

Val Glu Ser Lys Pro Asp Glu Leu Lys Val Thr Val Lys Leu Lys Pro
            100                 105                 110

Arg Leu Arg Thr Val Pro Val Gly Leu Glu Asp Cys Arg Pro Leu Asn
        115                 120                 125

Lys Lys Trp Arg Gly Met Lys Trp Lys Lys Trp Ser Ile His Ile Val
    130                 135                 140

Ile Pro Lys Gly Thr Phe Lys Pro Pro Cys Glu Asp Glu Ile Asp Glu
145                 150                 155                 160

Phe Leu Lys Lys Leu Gly Thr Cys Leu Lys Pro Asp Pro Val Pro Lys
                165                 170                 175

Asp Cys Arg Lys Cys Cys Phe Cys His Glu Glu Gly Asp Gly Leu Thr
            180                 185                 190

Asp Gly Pro Ala Arg Leu Leu Asn Leu Asp Leu Asp Leu Trp Val His
        195                 200                 205

Leu Asn Cys Ala Leu Trp Ser Thr Glu Val Tyr Glu Thr Gln Ala Gly
    210                 215                 220

Ala Leu Ile Asn Val Glu Leu Ala Leu Arg Arg Gly Leu Gln Met Lys
225                 230                 235                 240
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Cys Val Phe Cys His Lys Thr Gly Ala Thr Ser Gly Cys His Arg Phe
              245   250   255

Arg Cys Thr Asn Ile Tyr His Phe Thr Cys Ala Thr Lys Ala Gln Cys
          260   265   270

Met Phe Phe Lys Asp Lys Thr Met Leu Cys Pro Met His Lys Pro Lys
        275   280   285

Gly Ile His Glu Gln Gln Leu Ser Tyr Phe Ala Val Phe Arg Arg Val
    290   295   300

Tyr Val Gln Arg Asp Glu Val Arg Gln Ile Ala Ser Ile Val Gln Arg
305   310   315   320

Gly Glu Arg Asp His Thr Phe Arg Val Gly Ser Leu Ile Phe His Thr
              325   330   335

Ile Gly Gln Leu Leu Pro Gln Gln Met Gln Ala Phe His Ser Pro Lys
          340   345   350

Ala Leu Phe Pro Val Gly Tyr Glu Ala Ser Arg Leu Tyr Trp Ser Thr
        355   360   365

Arg Tyr Ala Asn Arg Arg Cys Arg Tyr Leu Cys Ser Ile Glu Glu Lys
    370   375   380

Asp Gly Arg Pro Val Phe Val Ile Arg Ile Val Glu Gln Gly His Glu
385   390   395   400

Asp Leu Val Leu Ser Asp Ser Ser Pro Lys Asp Val Trp Asp Lys Ile
              405   410   415

Leu Glu Pro Val Ala Cys Val Arg Lys Lys Ser Glu Met Leu Gln Leu
          420   425   430

Phe Pro Ala Tyr Leu Lys Gly Glu Asp Leu Phe Gly Leu Thr Val Ser
        435   440   445

Ala Val Ala Arg Ile Ala Glu Ser Leu Pro Gly Val Glu Ala Cys Glu
    450   455   460

Asn Tyr Thr Phe Arg Tyr Gly Arg Asn Pro Leu Met Glu Leu Pro Leu
465   470   475   480

Ala Val Asn Pro Thr Gly Cys Ala Arg Ser Glu Pro Lys Met Ser Ala
              485   490   495

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His Val Lys Arg Pro His Thr Leu Asn Ser Thr Ser Thr Ser Lys Ser
            500                 505                 510

Phe Gln Ser Thr Val Thr Gly Glu Leu Asn Ala Pro Tyr Ser Lys Gln
        515                 520                 525

Phe Val His Ser Lys Ser Ser Gln Tyr Arg Arg Met Lys Thr Glu Trp
    530                 535                 540

Lys Ser Asn Val Tyr Leu Ala Arg Ser Arg Ile Gln Gly Leu Gly Leu
545                 550                 555                 560

Tyr Ala Ala Arg Asp Ile Glu Lys His Thr Met Val Ile Glu Tyr Ile
            565                 570                 575

Gly Thr Ile Ile Arg Asn Glu Val Ala Asn Arg Lys Glu Lys Leu Tyr
            580                 585                 590

Glu Ser Gln Asn Arg Gly Val Tyr Met Phe Arg Met Asp Asn Asp His
        595                 600                 605

Val Ile Asp Ala Thr Leu Thr Gly Gly Pro Ala Arg Tyr Ile Asn His
    610                 615                 620

Ser Cys Ala Pro Asn Cys Val Ala Glu Val Val Thr Phe Glu Arg Gly
625                 630                 635                 640

His Lys Ile Ile Ile Ser Ser Asn Arg Arg Ile Gln Lys Gly Glu Glu
            645                 650                 655

Leu Cys Tyr Asp Tyr Lys Phe Asp Phe Glu Asp Asp Gln His Lys Ile
            660                 665                 670

Pro Cys His Cys Gly
        675


<210> 169
<211> 4823
<212> PRT
<213> Takifugu rubripes

<400> 169
Met Asp Glu Gln Lys Ser Asn Cys Glu Glu Asn Asp Ser Glu Pro Thr
    1                 5                 10                 15

Ala Asp Asp Asn Ala Ser Ser Lys Gln Leu Glu Glu Asp Ser Lys Thr
                20                 25                 30
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Cys Thr Ala Ala Glu Asp Val Ser Gly Ser Thr Val Ala Ser Ser Ser
         35                  40                  45

Thr His Ile Glu Ser Val Gln Val Cys Ala Leu Cys Asn Cys Val Glu
         50                  55                  60

Trp Ser Leu His Gly Gln Arg Glu Leu Arg Tyr Phe Gly Pro Phe Ser
65                  70                  75                  80

Glu Trp Arg Thr Leu Gln Pro Ser Ser Thr Pro Leu Pro Gln Pro Gly
                 85                  90                  95

Asn Asp Asp Leu Ser Ser Ile Gly Phe Ser Val Leu Pro Cys Leu Ala
                 100                 105                 110

Ala Leu Leu Asp Asp Ser Gly Cys Trp Val His His Trp Cys Ala
         115                 120                 125

Val Trp Ser Glu Gly Val Lys Gln His Glu Asn Asp Lys Leu Lys Asp
         130                 135                 140

Val Asp Lys Ala Val Ile Ser Gly Ile Pro Arg Leu Cys Glu His Cys
145                 150                 155                 160

Lys Arg Leu Gly Ala Thr Ile Gln Cys His Ala Glu Gly Cys Ser Arg
                 165                 170                 175

Phe Tyr His Phe Pro Cys Ser Ala Ala Ser Gly Ser Phe Gln Ser Met
                 180                 185                 190

Lys Gln Leu Leu Leu Leu Cys Pro Glu His Ile Asp Lys Ala Lys Glu
         195                 200                 205

Leu Gly Glu Glu Ala Cys Cys Ala Val Cys Asp Ser Ala Gly Glu Leu
         210                 215                 220

Ser Asp Leu Leu Phe Cys Thr Gly Cys Gly Gln His Tyr His Ala Ala
225                 230                 235                 240

Cys Leu Glu Ile Gly Ala Thr Pro Ile Gln Arg Ala Gly Trp Gln Cys
                 245                 250                 255

Pro Glu Cys Lys Val Cys Gln Thr Cys Arg Lys Pro Gly Glu Asp Ser
                 260                 265                 270

Lys Met Leu Val Cys Asp Ala Cys Asp Lys Gly Tyr His Thr Phe Cys
         275                 280                 285

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Leu Gln Pro Ala Met Asp Ser Leu Pro Thr Asp Pro Trp Lys Cys Lys
   290   295   300

Arg Cys Arg Val Cys Thr Asp Cys Gly Ala Arg Gly Leu Glu Leu Pro
305   310   315   320

Gly Ser Thr Gln Trp Phe Glu Asn Tyr Ala Val Cys Glu Ala Cys Gln
               325   330   335

His His Arg Asn Cys Thr Cys Ser Val Cys Asn Lys Pro Asp Gly Ser
           340   345   350

Val Ala Thr Leu Gln Ser Cys Ser Val Cys His Arg Leu Val His Ser
       355   360   365

Gly Cys Thr Leu Pro Lys Glu Leu Ser Glu Asp Lys Cys Ile Cys Leu
   370   375   380

His Cys Lys Glu Gln Leu Pro Val Thr Gln Pro His Thr Ala Glu Ile
385   390   395   400

Gln Thr Arg Glu Ala Pro Glu Asp Thr Ala Gly Arg Val Asp Leu Ile
               405   410   415

Glu Met Thr Ile Gln Thr Asp Ala Ala Met Thr Thr Glu Glu His Met
           420   425   430

Asp Val Pro Glu Val Thr Pro Arg His Lys Ser Leu Ala Glu Thr Asp
       435   440   445

Gln Ile Glu Ala Ser Ala Asn Thr Glu Thr Pro Met Asp Leu Gly Pro
   450   455   460

Asp Gln Lys Glu Thr Thr Ser Ser Val Glu Gln Gln Ala Glu Leu Leu
465   470   475   480

Lys Ser Asn His Asp Val Trp Pro Val Thr Asn Gln Leu Gly Thr Ser
           485   490   495

Leu Pro His Ser Glu Glu Glu Glu Asp Asp Asp Asp Pro Leu
       500   505   510

Arg Glu Glu Arg Cys Leu Val Ile Lys Gln Glu Leu Gln Glu Gln Lys
       515   520   525

Ile Lys Pro Asp Leu Leu Leu Asp Glu Thr Ser Asn Leu Ser His Gly
   530   535   540

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```
Asp Glu Ser Ser Ser Gly Phe Leu Gly Ser Pro Gly Glu Pro Asp Ala
545                 550                 555                 560

His Leu Ser Met Glu Phe Gly Leu Glu Ser Gly Ala His Ser His Ala
                565                 570                 575

Asp Asn Leu Leu Thr Glu Thr Asp Asp Ser Leu Pro Phe Glu Pro Leu
            580                 585                 590

Arg Ser Asp Arg Glu Lys Val Lys Arg Arg Gly Ser Pro Gly Arg Ser
            595                 600                 605

Arg Met Lys Gln Ser Arg Ser Ser Gly Phe Pro Gly Arg Arg Arg Pro
        610                 615                 620

Arg Gly Gly Gly Gly Gly Arg Gly Arg Gly Gly Arg Ser Arg Leu Lys
625                 630                 635                 640

Ala Met Ala Ser Cys Ile Asp Ala Leu Ser Met Ala Ser Asp Thr Gly
                645                 650                 655

Val Thr Lys Glu Glu Glu Glu Glu Asp Asp Thr Met Gln Asn Thr
            660                 665                 670

Val Val Leu Phe Ser Asn Thr Asp Lys Phe Val Leu Leu Gln Asp Met
        675                 680                 685

Cys Val Val Cys Gly Ser Phe Gly Lys Gly Ser Glu Gly Gln Leu Leu
        690                 695                 700

Ala Cys Ala Gln Cys Ala Gln Cys Tyr His Pro Tyr Cys Val Asn Ser
705                 710                 715                 720

Lys Ile Thr Lys Thr Lys Leu Arg Lys Gly Trp Arg Cys Leu Glu Cys
                725                 730                 735

Ile Val Cys Glu Met Cys Gly Lys Ala Ser Asp Pro Ser Arg Leu Leu
            740                 745                 750

Leu Cys Asp Asp Cys Asp Val Ser Tyr His Thr Tyr Cys Leu Asp Pro
        755                 760                 765

Pro Leu His Asn Val Pro Lys Gly Gly Trp Lys Cys Lys Trp Cys Val
    770                 775                 780

Cys Cys Val Gln Cys Gly Ser Asn Thr Pro Gly Phe His Cys Glu Trp
785                 790                 795                 800
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                            324

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Gln Asn Asn Tyr Thr His Cys Gly Pro Cys Ala Ser Leu Val Thr Cys
                805                     810                 815

Pro Val Cys Arg Glu Asn Phe Met Glu Glu Glu Leu Leu Leu Gln Cys
            820                 825                 830

Gln Tyr Cys Asp Arg Trp Val His Ala Val Cys Glu Ser Leu Tyr Thr
        835                 840                 845

Glu Asp Glu Val Glu Gln Ala Ser Asp Glu Gly Phe Ala Cys Thr Tyr
    850                 855                 860

Cys Ala Pro Tyr Val Pro Lys Pro Val Gly Lys Ser Lys Asn Ser Leu
865                 870                 875                 880

Ile Phe Ala Asn Ile Ser Ser Thr Glu Pro Gln Phe Tyr Arg Leu Glu
                885                 890                 895

Gly Val Trp Leu Thr Glu Ser Gly Met Ser Leu Leu Arg Ser Ile Ser
            900                 905                 910

Met Ser Pro Leu His Lys Arg Arg Gln Arg Arg Ser Arg Leu Gly Thr
        915                 920                 925

Leu Cys Cys Glu Gly Gly Ala Asp Trp Met Asp Leu Arg Glu Val Glu
    930                 935                 940

Gly Asp Gly Glu Glu Gly Lys Gly Glu Pro Met Glu Cys Glu Met Lys
945                 950                 955                 960

Met Glu Asn Leu Gly Ser Pro Glu Arg Glu Ala Gly Gly Glu Lys Asp
            965                 970                 975

Ala Cys Ala Asp Gly Ala Asp Gly Met Ala Asp Cys Asp Val Leu Lys
            980                 985                 990

Gly Gly Asp Asp Thr Glu Asp Ser Lys Lys Arg Lys Arg Lys Pro Tyr
        995                 1000                1005

Arg Pro Gly Ile Gly Gly Phe Met Val Arg Gln Arg Lys Cys His Thr
    1010                1015                1020

Arg Gln Lys Lys Glu Phe Phe Ala Gln Leu Ala Gly Glu Thr Thr Leu
1025                1030                1035                1040

Asp Gly Gln Pro Ile Glu Arg Thr Ile Asp Glu Asp Asn Ile Met Asp
            1045                1050                1055
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Pro Lys Pro Ala Glu Gly Glu Glu Gln Ala Lys Lys Arg Arg Gly Arg
              1060   1065   1070

Lys Lys Ser Lys Leu Glu Asp Met Phe Pro Ala Tyr Leu Gln Glu Ala
          1075   1080   1085

Phe Phe Gly Lys Thr Leu Ile Asp Leu Cys Lys Arg Ala Val Leu Ile
      1090   1095   1100

Pro Pro Gly Gln Arg Pro Ala Ser Cys Leu Val Arg Pro Ser Leu Pro
1105   1110   1115   1120

Ala Pro Ser Gly Leu Arg Ile Thr Ser Pro Glu Cys Glu Ser Arg Asn
              1125   1130   1135

Gln Ser Ile Phe Phe Ile Leu Glu Ser Gln Lys Pro Tyr Cys Glu Val
          1140   1145   1150

Thr Gln Ser Phe Phe Phe Phe Ala Ala Asp Ala Ser Asn His Val
          1155   1160   1165

Ala Lys Asp Ile Phe Pro Leu Lys Gln Glu Gly Cys Glu Gln Ser Gln
      1170   1175   1180

Ala Gln Lys Asp Gly Thr Gly Leu Pro Gln Gly Val Glu Asn Gln Asp
1185   1190   1195   1200

Ser Glu Gln Phe Phe Arg Lys Val Leu Gly Val Ser Asp Gly Ser Ser
              1205   1210   1215

Leu Gly Gly Met Lys Pro Ile Leu Glu Ser Ser Lys Gly Glu Ser His
          1220   1225   1230

Thr Ala Leu Pro Gln Ser Ala Leu Leu Pro Gly Ser Leu Pro Ser Ala
      1235   1240   1245

Glu Met Val Asp Ala Phe Pro Gly Leu Ser Gln Ser Pro Phe Leu Asp
      1250   1255   1260

Met Arg Asp Arg Gly Gly Leu Phe Ser Pro Asp Gly Gly Glu Glu Ser
1265   1270   1275   1280

Pro Trp Ala Thr Pro Ser Thr Pro Val Thr Pro Ser Ser Pro Pro Thr
              1285   1290   1295

Pro Thr Glu Thr Glu Gly Asp Gly Leu Ser Tyr Asn Gln Arg Ser Leu
              1300   1305   1310

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Gln Arg Trp Glu Lys Asp Glu Glu Leu Gly Glu Leu Ser Thr Ile Ser
    1315             1320             1325

Pro Val Leu Tyr Ala Asn Thr Asn Phe Pro Thr Leu Lys Arg Asp Tyr
  1330             1335             1340

Pro Asp Trp Ala Ser Arg Cys Lys Gln Ile Met Lys Ile Trp Arg Lys
1345             1350             1355             1360

Val Ser Ala Ala Asp Lys Val Pro Tyr Leu Gln Lys Ala Lys Asp Asn
              1365             1370             1375

Arg Ala Ala Gln Arg Ile Ser Lys Ala Gln Lys Gln Ala Glu Ser Gln
          1380             1385             1390

Val Cys Arg Pro Ile Lys Thr Glu Pro Gly Arg Val Lys Glu Arg Pro
    1395             1400             1405

Asn Leu His Leu Lys Ile Pro Leu Pro Ala Gly Ser Val Ser Ala Ser
  1410             1415             1420

Ser Gln Pro Ser Ser Ala Glu Ser Pro Phe Pro Leu Leu Pro Asp Ser
1425             1430             1435             1440

Gly Ser Ser Ser Val Phe Phe Ser Asp Gly Pro Val Arg Thr Pro Gly
              1445             1450             1455

Ser Ala Glu Ile Arg Thr Asp Pro Leu Ala Lys Phe Pro Pro Gln Ser
          1460             1465             1470

Pro His Cys His Ser His Pro Pro Thr Pro Phe Ser His Ala Gly Ala
    1475             1480             1485

Ser Pro Leu Gln Ala Ser Phe Ser Gly Tyr Val Pro Ser Gly Pro Gln
  1490             1495             1500

Gly Pro Pro Gln Gly Arg Pro Ala Ser Leu Gly Pro Phe Asp Met Gln
1505             1510             1515             1520

Pro Gly Thr Pro Gly Thr Pro Arg Arg Ala Gln Gln Val Asp Pro Tyr
              1525             1530             1535

Phe Arg Ser Gln Leu Gln Lys Gln Gln Gly His Leu Pro Gln Thr Gln
          1540             1545             1550

Gln Gly Ser Gln Glu Ser Leu Ala Pro Pro Gly Ser Pro His Ser Arg
    1555             1560             1565
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Val Ala Gly Ile Gly Glu Ser Pro Leu Phe Ser Pro Ser His Ser Thr
    1570              1575              1580

His Tyr Gly Asp Ala Phe Arg Asn Gln Gln Gly Met Gly Arg Pro Glu
1585              1590              1595              1600

Tyr Gly Ser Ser Pro Ser His Ser Gly Gln Ile Ser Ser Pro Ala Ser
              1605              1610              1615

Thr Gly Gln Tyr Arg Ala Asp Met Ser Val Pro Ser Pro Arg Ser Ser
          1620              1625              1630

Thr Gly Arg Thr Asp Leu Ser Thr Gly Ser Pro Ala Gly Met Leu Glu
          1635              1640              1645

Ser Gly Asp Gly Leu Phe Lys Ala Pro Met Thr Pro Arg Met His Gln
    1650              1655              1660

Gly Asp Gly Gly Ala Leu His Pro Gly Ala Ser Pro Ser His Pro Ser
1665              1670              1675              1680

Glu Gly Tyr Lys Gln Ser Pro Ser His Pro Phe Pro Glu Ser Pro Leu
              1685              1690              1695

Ile Pro Arg Pro Gln Ser Gly Asp Asn Cys Ser Leu Gly Pro Gln Arg
          1700              1705              1710

His Pro Ile Asn Gln Gln Glu Met Cys Pro Arg Val Pro Ser Ser Pro
    1715              1720              1725

Gln Ser His Ser Asn Ser Gln Ser Pro His Thr Pro Gly Gly His Ser
    1730              1735              1740

Asn Asp Gly Tyr Ser Ala Gln Ser Pro Ala Thr Pro Arg Phe Gln Ser
1745              1750              1755              1760

Pro Glu His Cys Ser Gln Pro Ser Ser Arg Pro His Ser Arg Asp Ala
              1765              1770              1775

Phe Thr Ala Val Gln Lys Pro Val Arg Ser Pro Ser Val Ala Pro Glu
          1780              1785              1790

Ala Pro Ser Phe Lys Asn Ser Pro His His Thr Asn Ser Thr Leu Gly
          1795              1800              1805

Asp Pro Leu Ser Gly Lys Pro Ser Ala Pro Pro His Phe Ser Ser Ile
    1810              1815              1820
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Pro Ser Thr Gly Gly Phe Gln Ile Thr Gln Gln Gln Asn Gln Met Val
1825   1830   1835   1840

Gln Gly Gln Leu Gln Gln Ser Gln Ala Gln Gln Asn Ile Gly Pro Asp
            1845   1850   1855

Asn Tyr Gly Ala Arg Val Pro Thr Pro Ser Gly Thr Gln Glu Val Pro
        1860   1865   1870

Val Val Arg Gln Pro Asp Pro Thr His Gln Pro Thr Leu Pro Gly Thr
        1875   1880   1885

Gln Glu Met Ser Asp Ile Ser Thr Val Gln Asp Pro Ala Leu Gly Gly
    1890   1895   1900

Leu Ser Pro Ser Glu Leu Glu Lys His Arg Gln Arg Leu Arg Glu Phe
1905   1910   1915   1920

Leu Ile Arg Gln Gln Met Gln Arg Asn Ser Ile Lys Gln Glu Lys Glu
            1925   1930   1935

Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Gly Asn
        1940   1945   1950

Ala Ser Ser Gly Trp Thr Gly Gly Glu Ile Cys Ala Phe Gln Gln Asp
    1955   1960   1965

Lys Thr His Arg Ala Pro Pro Pro Tyr Pro Gln Asp Arg Val Thr Met
    1970   1975   1980

Ser Ala Ala Gly Thr Gln Ala Pro Val Ala Gly Lys Met Pro Val Ala
1985   1990   1995   2000

Val Gly Gly Leu Glu Asp Lys Leu Ile Arg Pro Pro Pro Met Gly Thr
            2005   2010   2015

Pro Ala Ile Met Asp Pro Asn Thr Leu Arg Pro Gln Gly Pro Ser Arg
        2020   2025   2030

Pro Gln Gly Met Phe Asn Arg Pro Pro Phe Pro Pro His Trp Gln Asp
    2035   2040   2045

Gln Ser Thr Gly Pro Arg Arg Phe Pro Gln Pro Asp Leu Gln Ala Met
    2050   2055   2060

Gly Ile Arg His Asn Leu Asn Pro Ala Ala Asn Val Gln Asn Met Glu
2065   2070   2075   2080

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Gly Leu Gly Asn Pro His Thr Ile Ile Ala Gly His Gly Gly Glu Val
            2085   2090   2095

Met Gln Pro Met Ser Gln Gly Pro Pro Pro Gln Phe Ile Glu Leu Arg
          2100   2105   2110

His Asn Ala Gln Arg Leu Pro Leu Arg Pro Gln Phe Met Pro Arg Gly
      2115   2120   2125

Pro Gln Pro Arg Ala Arg Leu Phe Val Pro Gln Gln Thr Met Ser Ala
    2130   2135   2140

Pro Tyr Ile Ser Gln His Pro Ile Ser Gln Thr Gly Ser Ile Gln Thr
2145   2150   2155   2160

Asp Gly Ala Thr Asn Ser Gln Met Gly Leu Gln Gln Gly Gly Leu Ser
            2165   2170   2175

Val Leu Leu Pro Gln Gln Pro Thr Gly Ser Val Thr His Lys Ser His
          2180   2185   2190

Met Gly Pro Gln Ala Ala Ser Ser Ser Pro Asn Val Gly Thr Val Gln
      2195   2200   2205

Ser Gln Leu Pro Pro Gln Ser Val Val Thr Arg Pro Gln Pro Thr Thr
    2210   2215   2220

Val Glu Asn Ser Glu Glu Leu Pro Glu Pro Asp Leu Glu Gly Leu Gly
2225   2230   2235   2240

Asp Ala Ser Ala Asp Gly Gly Val Glu Asp Glu Asp Asp Leu Ala Leu
            2245   2250   2255

Asp Leu Asp Pro Asp Lys Gly Asp Asp Asp Leu Gly Asn Leu Asp Asn
          2260   2265   2270

Leu Glu Thr Asn Asp Pro His Leu Asp Asp Leu Leu Asn Ser Asp Glu
      2275   2280   2285

Phe Asp Leu Leu Ala Tyr Thr Asp Pro Glu Leu Asp Gln Gly Asp Pro
    2290   2295   2300

Lys Asp Val Phe Ser Asp Gln Leu Arg Leu Val Glu Ala Glu Thr Glu
2305   2310   2315   2320

Ala Pro Ser Ser Gly Ser Ala Gly Val Lys Val Glu Ile Lys Val Glu
            2325   2330   2335

Gln Gly Gln Lys Cys Ser Ala Val His Ser Thr Ala Gly Val Cys Ala
            2340   2345   2350

Asn Gln Leu Pro Ala Ser Ser Lys Thr Ala Gly Asn Leu Lys Ile Lys
        2355   2360   2365

Val Glu Asp Gly Gly Leu Ile Pro Gln Val Gln Pro Arg Gln Ile Val
    2370   2375   2380

Lys Asp Glu Ile Gly Glu Ala Val Ser Ala Leu Leu Gly Gly Thr Thr
2385   2390   2395   2400

Ser Ser Pro Lys Ser Thr Gln Pro Glu Asn Gln Pro Ala Ser Leu Ser
            2405   2410   2415

Ser Val Arg Leu Gly Gly Leu Ser Tyr Pro Leu Pro Ala Gln Thr Asp
            2420   2425   2430

Pro Leu His Phe Pro Pro Thr Gly Ser Asp Ala Asp Asp Asp Ala Leu
        2435   2440   2445

Glu Leu Pro Asp Val Gly Gly Gln His Ser Pro Ala Val Asp Leu Ala
    2450   2455   2460

Lys Val Glu Ser Ser Leu Asp Gly Glu Leu Pro Leu Leu Ile Gln Asp
2465   2470   2475   2480

Leu Leu Glu His Glu Lys Lys Glu Gln Gln Lys Gln Gln Gln Leu Ser
            2485   2490   2495

Ser Leu His Gln Gly Gly Val Ala Pro His Phe Ser Ala Leu Ser Thr
            2500   2505   2510

Asn Gln Gln Pro Asn Pro Gln Val Ala Gly Gln Ile Met Leu Pro Pro
        2515   2520   2525

His His Arg Pro Pro Pro Gln Gly Met Met Gly Pro Pro Gly Met Val
    2530   2535   2540

Pro Arg Pro Ser His Val Leu Gln Asn Gln Gln Pro Gln Gln Gln Arg
2545   2550   2555   2560

Leu Met Gly Pro Gly Leu Val Pro Pro Pro His Met Ala Met Asn Gln
            2565   2570   2575

Gln Gln Thr Met Ile Arg Met Gly Gln Pro Gly Ile His Ala Gly Leu
        2580   2585   2590

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Gly His Gln Gln Gln Pro Gln Ser Gly Val Lys Gln Pro Pro Leu Ser
        2595   2600   2605

Asn Asn Phe Phe Pro Asp Lys Asp Leu Asp Lys Phe Thr Thr Asp Asp
    2610   2615   2620

Ile Met Asp Pro Ile Ala Lys Ala Lys Met Val Ala Leu Lys Gly Ile
2625   2630   2635   2640

Asn Arg Val Leu Ala Gln Asp Pro Met Val Val Pro Pro Gly Ile Asn
            2645   2650   2655

Arg Glu Gln Val Ser Leu Leu Ala Gln Arg Leu Ala Ser Ala Pro Ala
            2660   2665   2670

Thr Asp Ala Gly Gln Leu Pro Ser Gly Pro Pro Lys Glu Gly Glu Thr
        2675   2680   2685

Ser Asp Pro Thr Gln Ser Arg Pro Asn Pro Pro Gln Phe Val Gln Gly
    2690   2695   2700

Ile Ile Asn Asp Ala Glu Lys His Gln Tyr Glu Glu Trp Leu Leu His
2705   2710   2715   2720

Thr Gln Gln Leu Leu Gln Met Gln Leu Lys Phe Leu Glu Glu Gln Ile
            2725   2730   2735

Gly Val His Arg Lys Ser Arg Lys Ala Leu Cys Ala Lys Gln Arg Thr
        2740   2745   2750

Ala Lys Lys Ala Gly Arg Glu Phe Ala Glu Ala Asp Ala Glu Lys Leu
        2755   2760   2765

Lys Leu Val Thr Glu Glu Gln Ser Lys Ile Gln Lys Gln Leu Asp Gln
    2770   2775   2780

Val Arg Lys Gln Gln Lys Glu His Thr Asn Leu Val Ala Glu Tyr Arg
2785   2790   2795   2800

Ser Lys Gln Gln Gln His Gln Gln Ser Ser Ser Leu Leu Asn Pro Gly
            2805   2810   2815

His Ser Gly Pro Ala Gly Ala Pro His Met Phe Pro Lys Met Pro Gly
            2820   2825   2830

Gln Met Val Ile Gly Gln Gln Gly Ala Gln Val Met Gly Gln His Pro
        2835   2840   2845

Thr Met Met Pro Gln Ala Gly Met Pro Val Arg Met Pro Gln Gly Gln
    2850   2855   2860

Pro Phe Val Gly Gly Pro Gln Pro Gln Leu Pro Ala Thr Leu Gly Asn
2865   2870   2875   2880

Ser Gly Val Arg Gly Pro Gly Pro Ala Ala Thr Pro Ala Gly Phe Leu
            2885   2890   2895

Pro Gln Gly Pro Gly Met Gln Ser Pro Asp Ala Arg Leu Leu Gln Glu
            2900   2905   2910

Arg Gln Leu Gln His Arg Met Gln Met Ala Lys Leu Gln Gln Gln Gln
        2915   2920   2925

Gln Gln Ile Met Met Gly Gln Gln Pro Ile Pro His Ala Gly Asn Ser
    2930   2935   2940

Gln Thr Asn Leu Ile Pro Gln Thr Gln Ser Gly Met Ile Gly Asn Pro
2945   2950   2955   2960

Val Met Ala Gln Gln Val Asn Ala Gln Gln Gly Met Pro Ser Asn Gln
            2965   2970   2975

Gly Ser Thr Gln Gly Met Met Gln Ile Pro Gln Gly Val Val Gly Ser
            2980   2985   2990

Gln Thr Val Val Ser Leu Pro Gln Asn Leu Ala Gly Gln Pro Ile His
        2995   3000   3005

His Ala Gln Ala Ile Ala Gly Gln Pro Gly Ile Met Gly Asn Gln Gln
    3010   3015   3020

Val Ala Met Ser Glu Gln Gln Arg Pro Met Gln Met Leu Ser Gln Gln
3025   3030   3035   3040

Gly Met Val Gly Ser Pro Gly His Pro Gly Ile Arg Gly Pro His Ser
            3045   3050   3055

His Leu Thr Pro Gln Gln Gln Asn Ile Leu Ala Gln Arg Met Leu Ala
            3060   3065   3070

Ser Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Leu His Gln Gln
        3075   3080   3085

Gln Gln Gln Gln Gln Leu His Gln Gln Gln Gln Gln Gln Leu His
    3090   3095   3100

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Gln Gln Gln Gln Gln Gln Gln Leu Gln Leu Gln Gln Gln Gln Gln Gln
3105   3110   3115   3120

Leu Gln Gln Gln Asn Val Asp Lys Asn Met Ile Gln Phe Gln Gln
             3125   3130   3135

Gln Gln Gln Met Ala Gln Lys Gln Gln Ala Met Gln Ile Ser Ser Gln
        3140   3145   3150

Pro Ser Gln Asp Gln Gly Gly Leu Ser Gln Pro Ser Thr Pro Gln Met
        3155   3160   3165

Gly Ser Ser Pro Cys Thr Arg Ser Val Thr Pro Gln Pro His Gly Gly
   3170   3175   3180

Thr Asp Ser Gln His Pro Cys Pro Lys Glu Ser Gly Leu Leu Ser Pro
3185   3190   3195   3200

Glu Ser Lys Thr Pro Pro Gln His Ser Gly Pro Ser Thr Pro Ser His
             3205   3210   3215

Val Tyr Gln Val Gly Ser Ala Asn Gln Leu Gln Gln Lys Lys Asp His
        3220   3225   3230

Leu Asn Leu Gln Lys Gln Thr Gly Leu Met Gly Asn Gln Gln Ser Met
        3235   3240   3245

Val Gln Gln Gln Gln Gln Gln Pro Leu Leu Thr Pro Gln Arg Gln Gly
   3250   3255   3260

Ser Val Thr Asp Asp Lys Pro Ser Met Met Asn Ile Lys Glu Glu Gly
3265   3270   3275   3280

Lys Thr Ile Asp Ile Ser Val Gln Gln Gln Gln Gln Gln Ala Val Gln
             3285   3290   3295

Asn Pro Met Met Gln Ser Gln Asp Ser Ser Met Gln Leu Gln Val Thr
        3300   3305   3310

Gly Gln Pro His Pro Gly Gln Gln Gln Pro Val Val Met Gly His Asn
        3315   3320   3325

Pro Gln Gln Gln Ala Leu Met Ala Gln His Gln Lys Gln Gln Ala Met
   3330   3335   3340

Met Gly Ile Ile Arg Ala Gln Gln Gln Gly Ile Thr Ala Gln Arg Pro
3345   3350   3355   3360

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Ala Leu Gln Pro Gly Gln Ile Arg Thr Pro Val Asn Ile Gln Ala Ile
            3365                3370                3375

Ile Ala Gln Asn Pro Gln Leu Arg Asn Leu Pro Pro Asn Gln Gln Ile
            3380          .      3385                3390

Gln His Ile Gln Ala Ile Ile Ala Gln Arg Gln Ile Gln Gln Gly Gln
        3395                3400                3405

Met Leu Arg Met Ala Met Gly Gln Gly Gln Ile Arg Pro Gln Met Pro
    3410                3415                3420

Pro Gly Gln Val Leu Gln Val Gly Gln Gln His Gln Ser Asn Met Leu
3425                3430                3435                3440

Gln Pro Gly Val Asn Ser Gln Met Gln Gln Gly Met Val Val His Gly
            3445                3450                3455

Gln Gln Gln Gln Ser His Thr Gly Glu Met Met Gln Asn Ile Ser Arg
            3460                3465                3470

Ser Gln Ala Pro Val Pro Pro Ala Thr Ala Glu Gln Gly Arg Met Ala
        3475                3480                3485

Met Pro Ala Ser Pro Cys Gln Pro Leu Ala Asn Pro Pro Gly Asp Pro
    3490                3495                3500

Gln Arg His Ala Phe Asn Gln Asn Met Ala Met Arg Pro Pro Thr Pro
3505                3510                3515                3520

Asn Gln Asn Gln Gln Ala Leu Met Ala Ala Gly Gly Arg Val Gln Gly
            3525                3530                3535

Ser Pro Ser His Ala Tyr Ser Pro Arg Gly Pro Phe Gly Met Ser Pro
        3540                3545                3550

Val His Pro Ala Ser Pro Asn Ser Ser His Ala Ser Ser Pro Ser Met
        3555                3560                3565

Gly Asp Gly Arg Ala Gly Arg Gly Ser Pro Tyr Asn Gln Ile Lys Ala
    3570                3575                3580

Ser Pro Leu Arg Ser Pro Gly Ala Lys Ser Pro Leu Asp Ser Leu Val
3585                3590                3595                3600

Leu Lys Val Glu Thr Gln Thr Ser Gly Asn Glu Thr Ser Gln Thr Ala
            3605                3610                3615
```

Leu Gly Ile Pro Asn Gly Pro Gln Lys Ser Ile Asn Ile Lys Gln Gln
            3620   3625   3630

Thr Gln Gln Val Ser Glu Val Leu Gly Pro His Ala Gln His Gly Ser
        3635   3640   3645

Ser Gly Glu Asn Pro Arg Arg Phe Ser Leu Gln Asn Ile Lys Gln Glu
    3650   3655   3660

Pro Arg Glu Val His Cys Asp Gly Ala Ala Ile Ala Asn Ser Lys Ala
3665   3670   3675   3680

Val Lys Arg Glu Val Thr Gly Glu Ala Val Thr Leu Gly Asn Asn Pro
                3685   3690   3695

Gly Phe Ile Asn Glu Gly Asn Ile Ser Gly Asp Pro Gly Asn Gln Gly
            3700   3705   3710

Pro Arg Ser Glu Thr Gly Gln Gln Leu Leu Gln Lys Leu Leu Lys Thr
        3715   3720   3725

Lys Asn Leu Gln Leu Gly Ala Gln Arg Pro Ala Asp Gly Ile His Asn
    3730   3735   3740

Glu Ile Asn Gly His Ile Asn Thr Lys Leu Ala Met Leu Glu Gln Lys
3745   3750   3755   3760

Leu Gln Gly Thr Pro Gln Asn Met Glu Val His Ser Val His Asp Leu
                3765   3770   3775

Gln Ser Ile Thr Lys Arg Ala Ala Val Gln Lys Pro Lys Arg Thr Ile
            3780   3785   3790

Lys Ala Ala Gly Gly Pro Asn Ala Arg Lys Lys Asn Lys Lys Glu Glu
        3795   3800   3805

Val Gly Lys Ser Thr Glu Thr Leu Ile Lys Gln Leu Lys Gln Gly Leu
    3810   3815   3820

Ser Leu Leu Pro Leu Met Glu Pro Ser Ile Thr Ala Ser Leu Asp Leu
3825   3830   3835   3840

Phe Ala Pro Phe Gly Ser Ser Pro Ala Asn Gly Lys Ala Gln Leu Lys
            3845   3850   3855

Gly Ser Phe Gly Asn Ala Val Leu Asp Asn Ile Pro Asp Tyr Tyr Ser
            3860   3865   3870

Gln Leu Leu Thr Lys Asn Asn Leu Ser Asn Pro Pro Thr Pro Pro Ser
        3875   3880   3885

Ser Leu Pro Pro Thr Pro Pro Pro Ser Val Gln His Lys Leu Leu Asn
    3890   3895   3900

Gly Val Thr Ser Ala Glu Glu Leu Ala Gly Gly Gln Lys Asp Lys Lys
3905   3910   3915   3920

Pro Ala Glu Glu Pro Met Glu Ser Val Thr Leu Glu Val Lys Ser Val
              3925   3930   3935

Asp Ile Leu Ala Ala Leu Pro Thr Pro Pro His Asn Gln Asn Glu Asp
          3940   3945   3950

Ile Arg Met Glu Ser Asp Asp Glu Asp Ala Pro Glu Ser Ile Ile Pro
      3955   3960   3965

Ala Ser Ser Pro Glu Ser Asn Ile Gly Asp Glu Ala Lys Arg Phe Pro
    3970   3975   3980

His Leu Gln Glu Pro Lys Glu Glu Glu Thr Glu Arg Ala Ile Ser Pro
3985   3990   3995   4000

Ile Ile Pro Leu Ile Pro Arg Thr Ala Ile Pro Ala Phe Pro Glu Tyr
              4005   4010   4015

Lys Pro Leu Glu Gly Ser Asp Ser Lys Val Ala Ser Thr Ser Asn His
          4020   4025   4030

Trp Glu Lys Ala Lys Ser Asn Glu Val Ser Val Thr Leu Thr Leu Ser
      4035   4040   4045

Ser Ala Ala Ala Lys Lys Leu Asn His Val Met Met Ala Met Ala Gln
    4050   4055   4060

Leu Leu Asn Ile Gln Met Pro Gly Ser Tyr Glu Leu Ser Phe Pro Pro
4065   4070   4075   4080

Gln Asn Pro Asp Met Ala Asp Phe Asp Gly Pro Gly Lys Gly Pro Gly
              4085   4090   4095

Gln Ser Ala Leu Gly Leu Ser Asp Gly Ala Ala Val Ser Gln Glu Glu
          4100   4105   4110

Trp Leu Arg Gln Phe Asp Val Ser Leu Pro Gly Cys Thr Leu Lys Lys
      4115   4120   4125

```
His Val Asp Ile Leu Ala Leu Ile Lys Gln Glu Phe Ser Glu Lys Glu
   4130                4135                4140

Asp Lys Pro Val Gln His Cys Tyr Thr Thr Asn Val Ser Asp Leu Asp
4145                4150                4155                4160

Val Arg His Leu Pro Asp Ile Pro Val Glu Glu Ser Pro Pro Ala Ser
               4165                4170                4175

Pro Ser Pro Pro Leu Pro Ala Ala Ser Ala Ala Val Ser Ser Ser Glu
            4180                4185                4190

Ala Glu Pro Val Lys Lys Ser Ala Ser Ser Ser Pro Ser Pro Ser Ser
            4195                4200                4205

Pro Ala Gln Val Gln Ile Lys Thr Glu Ala Glu Ser Asp Ser Gly Ala
   4210                4215                4220

Ala Ala Asp Ala Ala Gln Pro Ala Asp Leu Gly Glu Pro Gly Pro Pro
4225                4230                4235                4240

Glu Ser Asp Ala Ala Ala Ala Ala Pro Cys Ala Asp Pro Glu Pro Ala
            4245                4250                4255

Ala Pro Ala Asp Val Leu Pro Asn Val Lys Lys Trp Lys Gly Ile Arg
            4260                4265                4270

Trp Lys Arg Leu Pro Ile Val Ile Ser Ile Arg Lys Gly Ser Ser Lys
            4275                4280                4285

Lys Glu Thr Ser Arg Glu Val Ser Glu Leu Met Glu Ser Leu Arg Ile
   4290                4295                4300

Thr Leu Arg Pro Glu Arg Leu Pro Arg Asp Lys Arg Lys Cys Cys Phe
4305                4310                4315                4320

Cys His Glu Glu Gly Asp Gly Ala Thr Asp Gly Pro Ala Arg Leu Leu
            4325                4330                4335

Asn Ile Asp Val Asp Leu Trp Val His Leu Asn Cys Ala Leu Trp Ser
            4340                4345                4350

Thr Glu Val Tyr Glu Thr Gln Gly Gly Ala Leu Met Asn Val Glu Val
            4355                4360                4365

Ala Leu Arg Arg Gly Leu Arg Thr Leu Cys Ala Phe Cys Gln Lys Thr
   4370                4375                4380

                              338
```

```
Gly Ala Thr Asn Ser Cys Asn Arg Leu Arg Cys Pro Asn Val Tyr His
4385            4390            4395        4400

Phe Ala Cys Ala Ile Arg Ala Arg Cys Met Phe Phe Lys Asp Lys Thr
        4405            4410            4415

Met Leu Cys Thr Gln His Lys Leu Lys Gly Pro Ser Glu Asp Glu Leu
        4420            4425            4430

Ser Leu Phe Ala Val Leu Arg Arg Val Tyr Ile Glu Arg Asp Glu Val
    4435            4440            4445

Lys Gln Ile Ala Ser Ile Leu Gln Arg Gly Asp Arg Ile His Leu Phe
    4450            4455            4460

Arg Val Gly Gly Leu Ile Phe His Ala Val Gly Gln Leu Leu Pro Ser
4465            4470            4475            4480

Gln Met Ala Asn Phe His Ser Pro Thr Ala Ile Phe Pro Val Gly Tyr
        4485            4490            4495

Glu Ala Thr Arg Ile Tyr Trp Ser Thr Arg Leu Pro Asn Lys Arg Cys
        4500            4505            4510

Arg Tyr Arg Cys Arg Ile Ser Glu Asp Asp Gly Arg Pro Leu Phe Glu
    4515            4520            4525

Val Arg Val Leu Glu His Gly Met Glu Asp Leu Gln Phe Arg Asp Cys
    4530            4535            4540

Thr Pro Glu Gly Ile Trp Asn Gln Val Val Gln Lys Val Ala Gln Leu
4545            4550            4555            4560

Arg Glu Glu Ser Ser Met Leu Lys Leu Phe Thr Glu His Val Lys Gly
        4565            4570            4575

Glu Asp Met Tyr Gly Leu Thr Ile His Ala Val Met Arg Ile Thr Glu
        4580            4585            4590

Ser Leu Pro Gly Val Glu Asn Cys Gln Asn Tyr Gln Phe Arg Tyr Gly
    4595            4600            4605

Arg His Pro Leu Met Glu Leu Pro Leu Met Ile Asn Pro Thr Gly Cys
    4610            4615            4620

Ala Arg Ser Glu Pro Lys Val Ser Thr Gln Cys Lys Arg Pro His Thr
4625            4630            4635            4640
```

Leu Asn Ser Thr Ser Val Ser Lys Ala Tyr Gln Ser Thr Phe Thr Gly
            4645   4650   4655

Glu Leu Asn Thr Pro Tyr Ser Lys Gln Phe Val His Ser Lys Ser Ser
          4660   4665   4670

Gln Tyr Arg Arg Leu Lys Thr Glu Trp Lys Asn Asn Val Tyr Leu Ala
      4675   4680   4685

Arg Ser Arg Ile Gln Gly Leu Gly Leu Tyr Ala Ala Lys Asp Leu Glu
    4690   4695   4700

Lys His Thr Met Val Ile Glu Tyr Ile Gly Thr Val Ile Arg Asn Glu
4705   4710   4715   4720

Val Ala Asn Arg Arg Glu Lys Ile Tyr Glu Ser Gln Asn Arg Gly Ile
              4725   4730   4735

Tyr Met Phe Arg Ile Asn Asn Glu Gln Val Ile Asp Ala Thr Leu Thr
          4740   4745   4750

Gly Gly Pro Ala Arg Tyr Val Asn His Ser Cys Ala Pro Asn Cys Val
          4755   4760   4765

Ala Glu Val Val Thr Phe Asp Lys Glu Asp Lys Ile Ile Ile Ile Ser
    4770   4775   4780

Ser Arg Arg Ile Pro Lys Gly Glu Glu Leu Thr Tyr Asp Tyr Gln Phe
4785   4790   4795   4800

Asp Phe Glu Asp Asp Gln His Lys Ile Pro Cys His Cys Gly Ala Trp
              4805   4810   4815

Asn Cys Arg Lys Trp Met Asn
          4820

<210> 170
<211> 125
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: SET domain
      sequence

<400> 170

340

Lys Lys Leu Glu Val Phe Lys Ser Pro Gly Lys Gly Trp Gly Leu Phe
 1   5   10   15

Ala Thr Glu Asp Ile Pro Lys Gly Glu Phe Ile Leu Glu Tyr Val Gly
               20   25   30

Glu Ile Ile Thr Ser Asp Glu Ala Glu Glu Arg Glu Lys Ala Tyr Asp
           35   40   45

Thr Asp Gly Ala Lys Ser Ser Tyr Leu Phe Asp Ile Asp Ser Lys Asp
     50   55   60

Leu Cys Ile Asp Ala Arg Arg Lys Gly Asn Leu Ala Arg Phe Ile Asn
 65   70   75   80

His Ser Cys Glu Pro Asn Cys Glu Leu Val Phe Val Glu Val Asp Gly
               85   90   95

Asp Pro Arg Ile Val Ile Phe Ala Leu Arg Asp Ile Lys Pro Gly Glu
           100   105   110

Glu Leu Thr Ile Asp Tyr Gly Ser Asp Tyr Glu Gly Glu
         115   120   125

<210> 171
<211> 86
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: FYRC domain
      sequence

<400> 171
Leu Phe Arg Val Glu Val Glu Ser Asp Pro Gly Glu Val Phe Lys Gly
 1   5   10   15

Glu Ser Pro Glu Ala Cys Trp Glu Met Val Leu Glu Arg Val Gln Glu
               20   25   30

Ala Arg Ile Ala Ala Arg Leu Leu Gln Leu Leu Pro Glu Gly Val Ser
           35   40   45

Gly Glu Asp Met Phe Gly Leu Ser Ser Pro Ala Val Val Lys Leu Ile
     50   55   60

Glu Gln Leu Pro Gly Val His Gln Cys Thr Asn Tyr Trp Phe Arg Tyr

                              341

```
         65              70              75              80

His Arg Ser Pro Glu Leu
                85


<210> 172
<211> 48
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PHD-finger
      domain sequence

<400> 172
Cys Ala Val Cys Gly Lys Val Asp Asp Gly Gly Asp Leu Leu Gln Cys
1               5                  10                  15

Asp Gly Cys Asp Arg Trp Phe His Gln Ala Cys Leu Gly Pro Pro Leu
            20                  25                  30

Glu Glu Pro Pro Glu Gly Lys Trp Leu Cys Pro Glu Cys Thr Pro Lys
        35                  40                  45




<210> 173
<211> 54
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:  HMG domain
      sequence

<400> 173
Met Leu Phe Ser Gln Glu Asn Arg Lys Lys Ile Lys Ala Glu Asn Pro
1               5                  10                  15

Asp Leu Lys Asn Ala Glu Ile Ser Lys Lys Leu Gly Glu Arg Trp Lys
            20                  25                  30

Leu Leu Ser Glu Glu Glu Lys Ala Pro Tyr Glu Glu Lys Ala Lys Lys
        35                  40                  45
```

Glu Lys Glu Arg Tyr Glu
    50

<210> 174
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 174
gagctcacct tcacgtgtac at   22

<210> 175
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 175
ctaccccagg cccaacgtgt actg   24

<210> 176
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 176
gctgttgtcc gtcttattga tc   22

<210> 177
<211> 22
<212> DNA
<213> Artificial Sequence

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<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 177
gagctcacct tcacgtgtac at                                        22


<210> 178
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 178
ctaccccagg cccaacgtgt actg                                      24


<210> 179
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 179
gctgttgtcc gtcttattga tc                                        22


<210> 180
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 180
gagctcacct tcacgtgtac at                                        22


<210> 181
```

```
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
     Sequence

<400> 181
ctacccagg cccaacgtgt actg                                    24


<210> 182
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
     Sequence

<400> 182
gctgttgtcc gtcttattga tc                                     22


<210> 183
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
     Sequence

<400> 183
tctggacaag cagtgaccat                                        20


<210> 184
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
     Sequence

<400> 184
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```
accaccacca attccaagag agagga                                    26


<210> 185
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
     Sequence

<400> 185
ttctcagtgt gctggtcaca                                          20


<210> 186
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
     Sequence

<400> 186
tcaagtcctg agtggagatt agat                                     24


<210> 187
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
     Sequence

<400> 187
tggtcatccc agaactacct ctggca                                   26


<210> 188
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
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<223> Description of Artificial Sequence: PCR Primer
     Sequence

<400> 188
cccagaatta ccaagtgagt cct   23

<210> 189
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
     Sequence

<400> 189
aatgagaggg gtttcctgtc t   21

<210> 190
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
     Sequence

<400> 190
caggtcctgc tccttctggt gctg   24

<210> 191
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
     Sequence

<400> 191
caacgatccg actggacat   19

<210> 192
<211> 21

```
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 192
aatgagaggg gtttcctgtc t                                      21


<210> 193
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 193
caggtcctgc tccttctggt gctg                                   24


<210> 194
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 194
gcagacttcc ttccctgagt                                        20


<210> 195
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 195
tcctgaggtg tggatgaata ct                                     22
```

<210> 196
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 196
catcatctac aatggctacc ccagtga   27

<210> 197
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 197
ccatcttcag tggtgacttc at   22

<210> 198
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 198
gaaacagtcg gggaaacact   20

<210> 199
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer

Sequence

<400> 199
tggtcaagaa gacacaaaac actctca   27

<210> 200
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 200
aaaccaaagg cccagaattt   20

<210> 201
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 201
ggggaaatga cgctgataat at   22

<210> 202
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 202
cccctatata tgacctgact gccatg   26

<210> 203
<211> 22
<212> DNA

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
     Sequence

<400> 203
cccaaatagc agtaggcact tt   22

<210> 204
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
     Sequence

<400> 204
gaaacagtcg gggaaacact   20

<210> 205
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
     Sequence

<400> 205
tggtcaagaa gacacaaaac actctca   27

<210> 206
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
     Sequence

<400> 206
aaaccaaagg cccagaattt   20

```
<210> 207
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 207
tcctgaggtg tggatgaata ct                                  22


<210> 208
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 208
catcatctac aatggctacc ccagtga                             27


<210> 209
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 209
ccatcttcag tggtgacttc at                                  22


<210> 210
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence
```

```
<400> 210
ggggaaatga cgctgataat at                                          22


<210> 211
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
     Sequence

<400> 211
cccctatata tgacctgact gccatg                                      26


<210> 212
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
     Sequence

<400> 212
cccaaatagc agtaggcact tt                                          22


<210> 213
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
     Sequence

<400> 213
gaaatggcgc tgataatatg aa                                          22


<210> 214
<211> 26
<212> DNA
<213> Artificial Sequence
```

<220>
<223> Description of Artificial Sequence: PCR Primer
     Sequence

<400> 214
ccctatata tgacctgact gccatg   26

<210> 215
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
     Sequence

<400> 215
cccaaatagc agtaggcact tt   22

<210> 216
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
     Sequence

<400> 216
aattccataa tcaaggctgt ttt   23

<210> 217
<211> 35
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
     Sequence

<400> 217
tgcaacaata agatactctg gttgatatgt agcga   35

```
<210> 218
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 218
ggggatgact ctgattcata tttt                                    24


<210> 219
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 219
tttatgtcct tatgggctgg at                                      22


<210> 220
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 220
cccctatata tgacctgact gccatg                                  26


<210> 221
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence
```

```
<400> 221
cccaaatagc agtaggcact tt                                           22


<210> 222
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 222
cccacctgaa ctcctaaatt gt                                           22


<210> 223
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 223
ttttgttgcg aacagcagca ccct                                         24


<210> 224
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 224
atctttccga tggaaataac ca                                           22


<210> 225
<211> 22
<212> DNA
<213> Artificial Sequence
```

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 225
aatcacacaa atgccagatg tt   22

<210> 226
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 226
cactccaatg gttgacctaa aaccagg   27

<210> 227
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 227
agataaacta ccgcacccat gt   22

<210> 228
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 228
tagttatcta cctgcgcttc ca   22

<210> 229

<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
     Sequence

<400> 229
tctacacaga gaacaaacgc ttcccg   26

<210> 230
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
     Sequence

<400> 230
gaaggtgaag gagacagtca ca   22

<210> 231
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
     Sequence

<400> 231
ttcagaaaca ctgtccaaag ct   22

<210> 232
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
     Sequence

<400> 232

caccatgact taccatctga gccctg   26

<210> 233
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 233
gtgtctgtgc aaccacaaca ta   22

<210> 234
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 234
ttcagaaaca ctgtccaaag ct   22

<210> 235
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 235
caccatgact taccatctga gccctg   26

<210> 236
<211> 22
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 236
gtgtctgtgc aaccacaaca ta   22

<210> 237
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 237
agcctgattc ccaccattat ta   22

<210> 238
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 238
atctggccac agctctgact tccgt   25

<210> 239
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 239
accccagaga gggttcctta   20

<210> 240
<211> 22

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<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 240
tcctgaaaga atgttgtgca tt                                      22


<210> 241
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 241
tcttgaaagc caacttgatc ctggta                                  26


<210> 242
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 242
accatatgtt tctgcaaaac ga                                      22


<210> 243
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 243
gcaggctttg accttctca                                          19
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<210> 244
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<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 244
acccggaaga tgatcttgac ccct                                    24


<210> 245
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<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 245
ctgggacatg ttcttctgtg a                                       21


<210> 246
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<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 246
catcacgtgt gagctcacag t                                       21


<210> 247
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
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Sequence

<210> 247
cttccacatg gtgcactgct gct   23

<210> 248
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<220>
<223> Description of Artificial Sequence: PCR Primer
     Sequence

<400> 248
agaatttgca gacacagcaa tt   22

<210> 249
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<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
     Sequence

<400> 249
gagctcacct tcacgtgtac at   22

<210> 250
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<212> DNA
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<220>
<223> Description of Artificial Sequence: PCR Primer
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<400> 250
ctaccccagg cccaacgtgt actg   24

<210> 251
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<212> DNA

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 251
gctgttgtcc gtcttattga tc   22

<210> 252
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<212> DNA
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<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 252
gagctcacct tcacgtgtac at   22

<210> 253
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<212> DNA
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<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 253
ctaccccagg cccaacgtgt actg   24

<210> 254
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<220>
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gctgttgtcc gtcttattga tc   22

<210> 255
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<220>
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      Sequence

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gagctcacct tcacgtgtac at   22

<210> 256
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<220>
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      Sequence

<400> 256
ctaccccagg cccaacgtgt actg   24

<210> 257
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<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 257
gctgttgtcc gtcttattga tc   22

<210> 258
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<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

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<400> 258
gaggcagagg tcgcagtga                                          19


<210> 259
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 259
tgcaccactg ccctccagcc t                                       21


<210> 260
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 260
tttgagacgg agtcttgctc tgt                                     23


<210> 261
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 261
acgctcaagg agatccactt                                         20


<210> 262
<211> 24
<212> DNA
<213> Artificial Sequence
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<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 262
tctagcctgg gcctcagctt tctg   24

<210> 263
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<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 263
cacgttcacg aacacatctg   20

<210> 264
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 264
aacggagaca actgcttcaa   20

<210> 265
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
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<400> 265
gctatggttg cctactgcat gaccac   26

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<210> 266
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<213> Artificial Sequence

<220>
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      Sequence

<400> 266
taagttctct cccgcgaagt                                    20


<210> 267
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence

<400> 267
agatgaggac agcattgctg                                    20


<210> 268
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
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      Sequence

<400> 268
cttgcagccc tggctgtggc tac                                23


<210> 269
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      Sequence
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<400> 269
cagttgtctc cgttgtaggc   20